

# THE TIMES AND REGISTER.

A Weekly Journal of Medicine and Surgery.

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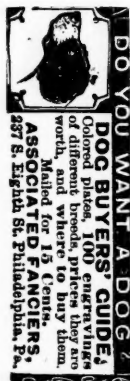
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**Prof. M. Semmola, M.D., of Italy,** says: Having tested and made repeated examinations of the RESTORATIVE WINE OF COCA, I hereby testify that this preparation is most excellent as a restorative in all cases of general debility of the nervous system, especially in disorders arising from excessive intellectual strain or other causes producing mental weakness. I also consider this wine invaluable for the purpose of renewing lost vitality in constitutions enfeebled by prolonged illness, particularly in cases of convalescence from malignant fevers.

**Prof. Wm. A. Hammond, M.D.,** in the course of some interesting remarks before the New York Neurological Society, on Tuesday evening, November 2, called attention to the impurities existing in most of the preparations of wine of coca, which vitiated their value, and he then said:

"Most of the wines of coca contain tannin and extractives, which render the taste of the article astringent, most disagreeable, and even nauseating, especially in cases where the stomach is weak. The difficulty arises from the fact that these wines of coca are made from the leaves, or even from the leavings after the cocaine has been extracted. The active alkaloid, which is the essential element, is therefore wholly lacking in some of these preparations, and this renders them practically worthless.

"I therefore asked a well-known gentleman of this city if he could not prepare a wine of coca which should consist of a good wine and the pure alkaloid. He has succeeded in making such a preparation. It seems almost impossible that there could be any such a substance, for its effects are remarkable.

"A wineglassful of this tonic, taken when one is exhausted and worn out, acts as a most excellent restorative; it gives a feeling of rest and relief, and there is no reaction and no subsequent depression. A general feeling of pleasantness is the result. I have discarded other wines of coca and use this alone. *It is the Health Restorative Co.'s preparation.* (Italics ours.)

"I have found it particularly valuable in cases of dyspepsia and weak stomach. The cocaine appears to have the power to reduce the irritation of the stomach and make it receptive of food. In extreme cases, where the stomach refuses to take anything, a teaspoonful of the wine may be tried first; the stomach will probably reject it. Another teaspoonful may be given, say fifteen minutes later, and this will possibly share the same fate; but by this time the cocaine in the wine will have so reduced the irritation of the stomach that the third teaspoonful will be retained, or at least the fourth or fifth, and the stomach thus conquered will be in a condition to retain food, which should be given without the wine.

"This wine of coca may be taken by the wineglassful, the same as an ordinary wine; there is no disagreeable taste; in fact, it tastes like a good Burgundy or Port wine. Taken three times a day before meals or whenever needed, it has a remarkably tonic effect, and there is no reaction. The article produces excellent results in cases of depression of spirits; in hysteria, headache, and in nervous troubles generally it works admirably. It is a simple remedy, yet efficacious and remarkable in its results."

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R.—Each pill contains the one sixth of a grain of the Hydrochlorate of Cocaine, two grains of the Sulphate of Quinine, and two grains of Acetanilide.

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N. B.—The pills being made without excipient, and with only coating sufficient to cover the taste, their solubility is almost instantaneous, and consequently of great advantage where prompt medication is required.

**Dr. R. C. McCurdy, of Livermore, Pa.,** Have used FEBRICIDE in two cases with grand results. In one case of sick headache it acted immediately.

**Dr. A. J. Rogers, Juniata, Neb.,** writes: Your sample of FEBRICIDE had not been in my hands an hour when I was called to see an old lady suffering severely with Rheumatism and Hyperaesthesia which was very general, and also with Asthma, of which she had suffered for many years. I gave her a pill three times a day until she had taken eighteen. She began to get relief after the fourth pill and continued to improve. By the time she had taken twelve pills, Rheumatism and Acute Sensitiveness were no more, and she has not felt anything of them since.

**Dr. J. A. Brackett, of Pembroke, Va.,** "I have used Febricide in case of childbed fever with remarkable effect, temperature 103°. I had tried other usual remedies without much change; soon after using Febricide the change was like magic."

**Dr. C. E. Dupont, of Grahamville, S. C.,** "Febricide has proved of great benefit to the patient I tried it on. It was a case of Malarial Toxaemia in an old lady; the attacks had become very irregular and lately had been attended with intercostal neuralgia, which alarmed her exceedingly. The pills acted well and quickly, as heretofore it usually took me ten days, at least, to relieve her of an attack, but this time she was up on the fourth day and wanting to go on a visit."

**P. M. Senderling, A.M., M.D., of Jersey City, N. J.,** writes: July 13 I was called upon to visit a lad aged 15 years, who had been suffering for over two weeks with, as alleged, "Inflammatory Rheumatism," and had been attended by another doctor and discharged as convalescent a week prior to my first visit. I found him in this condition; pulse 110; temperature (under tongue) 103.35; the right knee-joint greatly swollen and intensely painful, a troublesome diarrhoea also present. Careful inquiry and examination demonstrated to my mind that the difficulty or "Materies Morbi" was clearly traceable to malarial influence. I at once placed him under the treatment which for years I had found most efficient, but up to the 16th I had utterly failed to reduce either his temperature or frequency of pulse. On my morning visit of 16th I found his condition thus; temperature (under tongue) 104.25; pulse 116 and his general condition indicative of great suffering. I at once suspended all other treatment and gave him one pill 'Febricide' every three hours. At 8 P.M., 16th inst. I found my patient much better, his temperature had fallen to 102; pulse 96; and his general appearance indicating decided improvement in every particular. On 17th his temperature had fallen to 101.15; pulse 90. 18th 100.15; pulse 90, and with great improvement in condition of knee-joint, the swelling, abnormal heat and sensitiveness were entirely gone. I am so confident this case will speedily and perfectly convalesce, that I do not deem it necessary to delay communicating the result of my first trial of the "Febricide." I will say that in this case antifebrin and antipyrin were successively tried in full doses, and to meet the synovitis, full doses of quinine and salicylate of soda were also used; the local treatment being alkaline lotions which I did not discontinue.

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I trust the profession will give them a trial, feeling confident that they will be well pleased with the results obtained. Yours respectfully,

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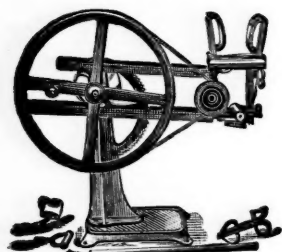
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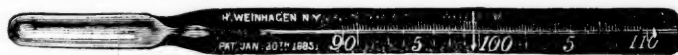
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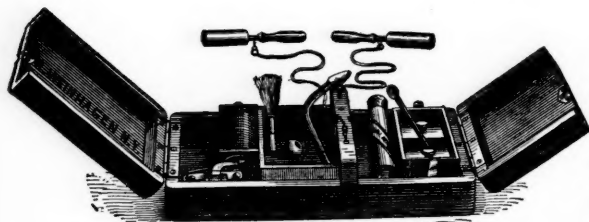
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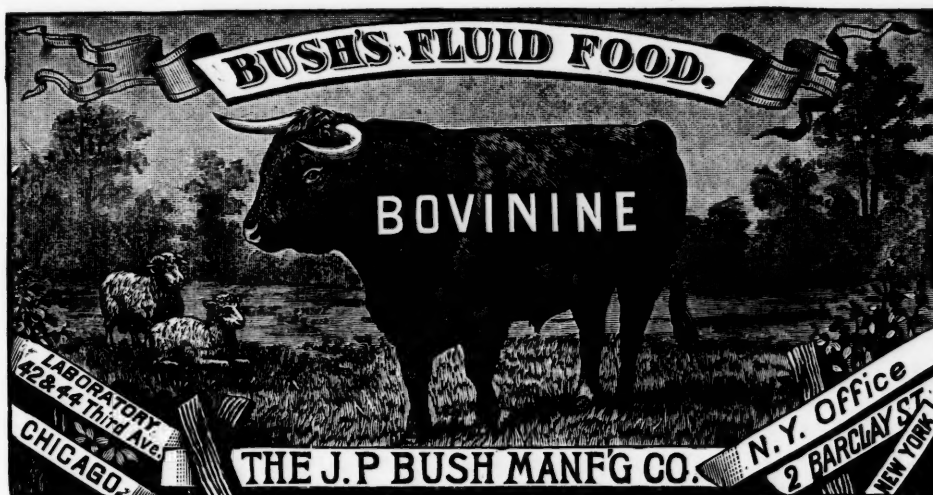
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## RAW FOOD EXTRACTS AND THEIR VALUE.

FROM AN ESSAY READ BEFORE THE AMERICAN MEDICAL ASSOCIATION AT WASHINGTON, D. C., MAY 6th, 1884,

By B. N. TOWLE, M.D., OF BOSTON.

"Nervous debility and neuralgia are often the results of nerve starvation. They are now, more than ever, the dread of every intelligent physician, and the terror of all business men. The weary hours of pain, and the sleepless nights of those suffering from nervous diseases, are but the beseechings of an exhausted nerve for food. Hungry and starved, they make their wants known by the pain they set up as their only agonizing cry; and no medication will give permanent relief until the hunger is satisfied.

Our research, then, must be to find a more easily digested and assimilated food.

Observation seems to sanction the fact that vegetable food elements are more readily assimilated by persons of feeble digestion than are the animal food elements, and especially when they have undergone the digestive process in the stomachs of healthy cattle. The juices of these animals, when healthy and fat, *must* contain all the food elements in a state of solution most perfect, and freed from all insoluble portions, and hence in a form more easily assimilated than any other known food.

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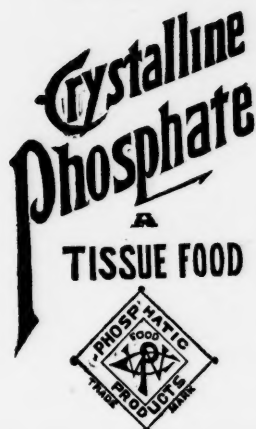
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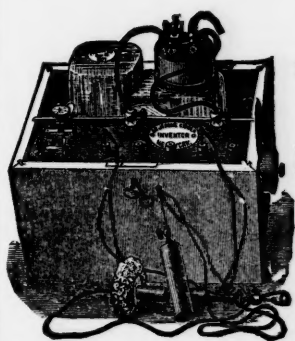
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The Medical Register.  
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## Clinical Lecture.

### ILLUSTRATIVE OF SPINAL LOCALIZATION.<sup>1</sup>

By CHARLES K. MILLS, M.D.,

Neurologist to the Philadelphia Hospital, Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic.

CORNUAL HEMORRHAGIC MYELITIS AT DIFFERENT LEVELS—PARALYSIS OF THE ARM FROM AFFECTION OF THE GRAY MATTER, AND OF THE LEG FROM EXTENSION TO THE PYRAMIDAL TRACTS—ATROPHIC PARALYSIS IN THE FACIAL AND TRIGEMINAL DISTRIBUTION.

SPINAL localization has long been a subject of great interest to the neurologist and neuro physiologist, and in very recent years its study has received a strong impetus from the fact that surgeons no longer hesitate to lay open the vertebral canal. Some of the cases which will be shown and studied in this and succeeding lectures, have a possible surgical importance; others have particular value for other reasons. In a broad sense, spinal localization includes a study of lesions focal or diffused, acute or chronic, vertical or horizontal; but I will limit myself in this course of lectures to focal lesions affecting the spinal column or cord at different heights, either by pressure, nerve involvement, or destruction of nuclei.

The first case to which your attention will be directed is one of unusual character, and, in my experience, very rare, and one also which, on superficial study, might be misleading. The various lesions in this case seem to have primarily involved certain

groups of cells in the gray matter of the spinal cord and bulb, therefore giving an admirable opportunity of making a clinical study of the condition of the paralyzed muscles related to cell-clusters at particular locations transversely; but I will first give you a history and some details about the patient, and then study him before you.

The following are the notes of this case from the hospital records, but somewhat condensed;

W. S., aged fifty-three, born in Germany, in 1863, had a non-inflammatory bubo of the right side, and shortly afterward his hair fell out slightly, but he had no other secondary symptoms. He cannot remember having had any chancre. He had always been a moderate drinker. In 1869 he was disabled for several months by an attack of rheumatism.

In March, 1884, he had a sudden left hemiplegia or monoplegia without unconsciousness, for which he was admitted to the Philadelphia Hospital. Both arm and leg were involved in the palsy. In twelve weeks he was so far recovered as to be able to walk with the aid of a cane, and was discharged. In November, 1886, he had another apoplectiform seizure, with unconsciousness and delirium. This was not accompanied by palsy, and he rapidly recovered, being able in three weeks to walk without a cane.

In January, 1888, after a few days of headache, difficulty of speech, pain in the eyes, sensations of cold, he arose one morning with left facial palsy, which was almost complete. His mouth was drawn to the left when he came under observation, apparently from secondary contractions.

It has been recently discovered that this patient has also an affection of the muscles to which the motor branches of the fifth nerve are distributed, as well as

<sup>1</sup> Delivered at the Philadelphia Hospital, November 16, 1889.

of some of the sensory fibers of the same nerve. Some months ago he developed a serious anæsthetic and inflammatory affection of his left eye, and eventually this eye was removed by Dr. de Schweinitz.

A recent examination developed the following facts with reference to his face: "The left forehead is absolutely smooth, and the patient cannot corrugate it. The left angle of the mouth is drawn upward with rigidity and enlargement in the line of the naso-labial fold, probably due to a persistent spastic condition. Every few minutes the eyelids and muscles of the left side of the face twitch. He cannot fully protrude the tongue, but can just manage to get its tip to or beyond the under lip; tremulous, undulatory movements of the tongue are present usually. He cannot whistle nor dilate the left nostril. The left platysma movement is weakened. The masseter and the temporal muscles are evidently both atrophied and weak. He cannot protrude the lower jaw nor perform grinding movements. Sensation is blunted over the left side of the face. Degeneration reaction is present both in the muscles of the seventh and of the fifth nerves."

Examination of his left arm shows paralysis with marked atrophy, particularly in the extensor and supinator muscles, although perhaps not absolutely confined to them. Advanced degeneration reaction is present in the arm as in the face. He has a wrist drop similar to that which is observed in cases of lead palsy, only not affecting both sides.

As will be noticed, he drags the left leg decidedly in walking. Close examination shows impairment of power in the muscles, both of the thigh and leg, much as in a case of cerebral monoplegia or hemiplegia, the extensors and abductors suffering more than their antagonists. No atrophy is present as in the arm, and all the muscles respond both to faradism and galvanism, a striking difference between this limb and the upper extremity and face.

An ophthalmoscopic examination made in January, 1889, by Dr. G. E. de Schweinitz, gave the following result: The right eye has a round pupil; light reflex is preserved; a large oval optic disc with a dish-like, shallow excavation; the disc distinctly gray, arteries as compared with the veins smaller than normal. Spots of pigment could be seen on the anterior capsule of the lens indicating a former iritis. In the left eye the pupil is nearly occluded as the result of a former iritis, preventing any view of the fundus. Diagnosis, old iritis and incipient atrophy of the optic nerve. Since the date of this examination, while the patient was under the care of Dr. Lloyd, the left eye became much inflamed, the cornea ulcerated and sloughed, and the eye, as already stated, was removed by Dr. Schweinitz.

Examination for hearing by Dr. Lloyd, showed that with the tuning fork applied to the center of the forehead, the patient did not appear to hear it in either ear. When applied to the central incisor teeth he always heard it best in the left ear (affected side). This he did whether either or both ears were closed. This test was applied frequently, and always with the same result, and would seem to prove that his partial deafness was due to paralysis of the tensor

tympani, rather than to affection of the auditory nerve.

A peculiarity of this case is that touching or handling the patient on the paralyzed side, either on leg, arm or face, causes him to wince, shrink or complain. The affected parts seem to be sensitive. Sometimes handling the paralyzed limbs will bring on involuntary shaking movements of the arm of the opposite side.

Let us now study still more closely this case. It is one of rarity and unusual interest. We have here a man palsied upon the left side of the body, face, arm and leg. We will commence our examination with the arm and leg, as these were the first attacked. He can lift and use his arm for various movements of the shoulder, proving that he has good control of the muscles of the shoulder and upper arm, including the deltoid, supra- and infra-spinati, trapezius and rhomboid. He can also flex strongly at the elbow, showing that the biceps, coraco-brachialis, and brachialis anticus are not paralyzed. Let us look below the elbow. You see he is scarcely able to move his hand, the little motion produced coming from the upper arm. Continuing, we discover that this man's arm is almost totally paralyzed below the elbow, almost totally escaping above. The extensors of the hand and wrist, the flexors of the same, but not completely, the extensor of the thumb, and the intrinsic muscles of the hand are all involved. He has a little supinating power; the supinator longus in fact seeming to be the only muscle below the elbow which has escaped. He is able to rotate the arm inwards and with difficulty outwards. On close examination we find that his triceps, latissimus dorsi, and possibly teres muscles are paretic. Comparing the two arms, you will notice at once how greatly this left arm is atrophied below the elbow. He has a decided unilateral wrist drop.

In a case of this kind it is very important to test the electrical conditions of the muscles, and we will now proceed to do this, examining first with the faradic battery, and commencing with the upper arm muscles. You see how perfectly the deltoid responds to the current, also the scapular muscles, coraco-brachialis, brachialis anticus and biceps. The triceps response is weak; at any rate we do not get the quick response as in the others. Proceeding now to the forearm and hand, we get no response from the extensors at all, a slight one from the supinator. The extensors are absolutely palsied and atrophied. The pronators respond somewhat to a strong current. Some of the flexors of the wrist, to a certain extent, respond, but those of the fingers do not. We shall test also with the galvanic battery, for the reason that in some cases although we find an absolute loss of reaction with the faradic battery, there will be some response to the galvanic, but here, as you see, there will be no response in the muscles which did not react to faradism. The muscles are so dead and degenerated that nothing is left to contract.

Let us next look at his left leg. We find here a different state of affairs. His leg is more paralyzed than his arm, that is, he has a more general loss of motor power in his leg. His leg presents the features of



an ordinary case of cerebral monoplegia, instead of the palsy being confined to definite muscles above or below the knee. The muscles all react to the faradic and galvanic currents.

The two conditions of the limbs presented for diagnosis are then: 1. An atrophic paralysis with degenerative reaction in the left forearm. 2. A paralysis, general, but not complete and not atrophic, in the entire left leg, with response to the electrical currents.

This case was at first regarded as one of hemiplegia from brain lesion, but it is impossible to explain any atrophic paralysis like that seen in this forearm by a cerebral lesion. What can it be then?

We know, or believe we do, the functions of every segment of the spinal cord, and we have them here exhibited in a tabular form from a paper of my own on spinal localization.

Let me repeat for you from this table the muscles whose functions are represented in four of these spinal segments, those of the lower cervical cord. They are as follows:

*Sixth Cervical Segment.*—Biceps, brachialis anticus, subscapular, pectoralis (clavicular part), serratus magnus, triceps, extensors of wrist and fingers, pronators.

*Seventh Cervical Segment.*—Triceps (long head), extensors of wrist and fingers, pronators of wrist, flexors of wrist, subscapular, pectoralis (costal part), serratus magnus, latissimus dorsi, teres major.

*Eighth Cervical Segment.*—Triceps (long head), flexors of wrist and fingers, intrinsic hand muscles.

*First Dorsal Segment.*—Extensors of thumb, intrinsic hand muscles, thenar and hypothenar muscles.

This patient has had either a hemorrhage or a hemorrhagic myelitis affecting the anterior horns of the cord on one side, the inflammation or hemorrhage extending into the lateral column—to the motor tracts of the same side. The attack was practically a form of anterior poliomyelitis, but it is a question whether it was an inflammation or a hemorrhagic inflammation, or a hemorrhage. His leg gives the phenomena of cerebral paralysis, and the condition is due not to a trophic lesion of the gray matter, but to a destructive interference with the cross pyramidal tracts with, perhaps, some secondary degeneration.

If we make a series of transverse sections through the cord at different heights, we get different sizes of the horns of the cord, as seen in this diagram, showing such section. From the third or fourth cervical to the second dorsal segment, the horns are very large, because they represent extensive muscular movements in the upper extremity. The cells are arranged in groups, four or five cell-clusters. These groups may be only in one section, or may continue through two or three sections of the cord. Thus, if we cut through the sixth, seventh and eighth cervical segments and the first dorsal, and examine microscopically, we find some of the same groups of cells represented in two or more sections. Each one of these cell-groups is a physiological unit, and represents a muscular movement. Consequently we know that the movements which are destroyed in this man are referable to certain groups of those cells, and thus we are able to locate the injury to the cord.

Certain types of paralysis have been erected, both of the upper and lower limbs. Thus there is an upper arm type of paralysis which includes the muscles which have here escaped in this patient. We have also a forearm type which includes the muscles here paralyzed.

In the seventh cervical segment of the cord, you will see by referring to the tabular statement, are cells representing the long head of the triceps, the extensors of the wrist and fingers, the pronators and flexors of the wrist, the latissimus dorsi, teres major, and the costal parts of the pectoral muscles—almost exactly those here involved. In the eighth cervical are again the triceps, the flexors of the wrist and fingers, and in addition the intrinsic muscles of the hand, also the thumb and thenar muscles.

The lesion of the cervical cord in this man certainly involve chiefly the groups in these three segments; to some extent also the sixth segment. The probabilities are that the hemorrhage, or the focus of the myelitis, in this man was in the anterior horn of the left side in the seventh cervical segment, and that it reached out to the adjoining segments, and also to the white matter of the crossed pyramidal tracts.

Let us finally look at this man's face. He can wrinkle his forehead on the right side, but not on the left. He has a loss of power in the zygomatics, the orbicularis palpebrarum, and all the muscles about the mouth, showing a paralysis of the portio dura or seventh nerve. The temporal muscles on the left side, and the masseter and pterygoids are also paralyzed—an unusual condition. The electrical reaction of the face is the reaction of degeneration. This palsy occurred from the second attack.

As we ascend higher in the cord to the floor of the ventricle, we find large groups of cells which are the nuclei of the cranial muscles. Our patient has a paralysis of the facial nerve, and of the motor fifth. There is also some hyperæsthesia of the face. It is most likely that the same sort of lesion is present in the bulb as in the cord, a hemorrhagic or myelitis destroying cell-groups of both the facial and trigeminal nerves.

The disease of his eye, which led to removal, was not due to the fact that the eye was open as a result of the paralysis of the orbicularis palpebrarum, but was a trophic affection from the lesion of the nucleus of the fifth nerve.

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A NEW skin disease among cattle in Maryland, Pennsylvania, Delaware and Virginia has recently come under the observation of Dr. Wray, State Veterinary Surgeon of Maryland. The first case was discovered in St. Mary's county in July last, and investigation showed that the disease is prevalent throughout this and adjoining States. The disease is not contagious, but arises spontaneously. The animal at first suffers from constipation, which is followed by sloughing and ulceration of the skin, particularly of the mouth, nose, etc. The disease does not seem to be fatal, but it interferes very much with the milking of cows afflicted with it.

## Original Articles.

FERMENTATION—ITS CAUSE AND EFFECTS.<sup>1</sup>

BY ERNEST LAPLACE, A.M., M.D., PARIS,  
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GENTLEMEN:—All that lives must die, and, dying, disintegrate and resolve itself into elements that enter into new cycles of usefulness. This phenomenon of universal disintegration must have aroused the interest of the human intellect from the first moment that it reached such a state of perfection as led it to inquire into the causes of things. If this disintegration did not exist, the matter of organized beings would encumber the earth, and the law of perpetuity of life would be compromised. A great phenomenon presides over this work; this phenomenon is fermentation.

Our forefathers might have been savages, but they were clever and observant ones. After organizing their own rude arts, they turned beasts into servants, they founded agriculture, planted the grape—this fruit was surely antediluvian, for we are told that Noah, on leaving the ark, planted a vineyard, drank of the wine, and experienced its consequences. But though wine and beer are as old as history, it was not until the last few decades that anything positive has been known as to the true mode of their formation. Our knowledge in the matter has been almost identical with our knowledge of medicine, that is, empirical—by which is meant that we had observed the facts, aside from the principles which produce them, and which are essential for a true understanding of them. In a word, when light dawned upon the true secret of the manufacture of beer, by the immortal discoveries of Pasteur, that same beam spread itself over the whole realm of medicine; was the light of regeneration to the noblest of sciences.

The brewer learned from long experience the conditions, not the reasons, of success. Often, however, the brewer's beer has fallen into rottenness, without any accountable cause.

It is the hidden enemies against which the physician—like the brewer—has had to contend, that recent researches are dragging into the light of day, thus preparing the way for their final extermination.

While still a young man, Pasteur, who was then a professor of chemistry in the Ecole Normale of Paris, was attracted by a note of the German chemist Mitscherlich, in which he said to the Academy of Sciences: "The tartrate and paratartrate of soda and ammonium have the same chemical composition, the same crystalline form and angles, the same specific weight, and the same double refraction. Dissolved in water, the refraction is the same. But the dissolved tartrate turns the ray of polarized light to the left, whereas the paratartrate is *indifferent*. But," adds Mitscherlich, "the nature and the number of the atoms is identically the same." Pasteur, who was then but twenty-five years of age, discovered

that the crystals which turned polarized light, were not symmetrical. He noticed that all products of organic life were dissymmetrical—such as starch, quinine, strychnine, while all mineral crystals, or products of the inorganic world, were symmetrical. He immediately suspected that tartrates were organic, that is, connected directly or indirectly with life. It was a well-known fact that a German manufacturer of chemical products, having thrown away some impure tartrate of lime, mixed with albuminoid materials, this had fermented, giving rise to different products. Pasteur reproduced this fermentation in the following way: Taking some tartaric acid, he added a certain amount of albuminous material, and placed it in an incubator. When fermentation had taken place, Pasteur found innumerable small living organisms, and after the process had stopped he polarized the liquid and found that, whereas before fermentation the polarization was to the left, it had now turned to the right. His suspicion was realized. Hence, this sudden change of the direction of the ray of polarized light was accompanied by a great development of living organisms during a process heretofore known simply as fermentation. This was the first hint ever gotten of the influence of a living micro-organism upon organic substances. This micro-organism was not present, apparently, when the mixture was placed in the incubator, and now it existed in swarms in the disintegrating mixture. They surely grew during the fermentation.

Up to this time the most incomplete notions had been entertained as to the true cause of fermentation. Liebig said they were "acidations of albuminous substances when in contact with air." Gay-Lussac thought that the oxygen of the air was the causative agent, for he had noticed that wine had turned sour from being poured from one vessel to another. Berzelius and Mitscherlich said that ferments acted by catalysis—that is, by their presence. Schwann and Cagnard Latour noticed that a living, rounded body was present in the manufacture of beer; but it did not occur to them to ascertain what part was played by this organism. As soon as the malt is mixed with hops it is boiled, and allowed to cool; this infusion is called the wort, and this is placed in vessels with but one aperture open to the air. Here it is mixed with the yeast. Soon after a brown froth forms on the surface, which is really new yeast, and issues from the aperture, falling like a cataract into troughs prepared to receive it. Whence is this new yeast? Weigh it before and after. The brewer sows ten pounds and he collects fifty pounds. Shall we say that this is spontaneous? Are we not reminded of the seed that has fallen in good soil and brought forth fruit fifty- or a hundred-fold? In fact, this seed can be seen budding under the microscope, before our own eyes. It is a minute plant—the *Torula Cerevisiæ*. This marks a distinct epoch in the history of fermentation. But Liebig was loath to accept the growth of this plant as the cause of fermentation, and maintained that its life had nothing to do with the process, that it was a purely chemical one, and that it was the chemical nature of yeast, not the fact that it was alive and could develop life,

<sup>1</sup> Delivered before the Odontological Society of Pennsylvania, November 2, 1889.







which produced fermentation. In a memorable demonstration, Ludersdorf proved the error of Liebig's assertion, and that yeast acted as a ferment because of its organized or living character.

He destroyed the cells of yeast by rubbing them on a ground glass plate, and he found that with the destruction of the organism, the chemical nature remaining the same, the power to act as a ferment disappeared totally. No experiment could possibly be more conclusive.

But in the manufacture of wine, no yeast is added. The grape is pressed, and the juice ferments after a short while. The torula soon makes its appearance, however, and where does it come from? If the filtered grape juice be boiled, so as to destroy the germs it contains, and be put in germless air, it will never ferment. All the material for spontaneous generation is there, but the life, both in the grape juice and the air, being destroyed, no new life can be produced in the shape of fermentation.

Pasteur has pushed this demonstration still further. The grape is sealed by its own skin from contamination by the air. He contrived a way of extracting the juice, without its touching any contaminated substance, and placing it in pure air; it did not ferment; then taking the skin of the grape and brushing the delicate grayish dust upon this non-fermenting juice, fermentation soon developed and the yeast plant appeared in great abundance, proving that the grape carries its yeast upon its own self. For thousands of years, therefore, the wine grower has done unconsciously what the brewer does purposely.

The germ of the yeast plant exists in the air, but not in quantities sufficient to ensure rapid fermentation such as the brewer desires, hence the brewer puts in a quantity himself.

Pasteur has defined fermentation as life without air. These germs live on oxygen as we do, and give off carbonic acid gas; but they do not take their oxygen from the air, they take it from the substance upon which they grow, hence they do not need the oxygen of the air for their development. Hence fermenting substances are placed in vessels with but a small aperture to the open air, where the yeast imbibes oxygen and pours forth carbonic acid. Where does it get the oxygen? It is wrenched from the liquid upon which it grows, liberates carbonic acid gas, and leaves the liquid product as our familiar alcohol.

And in the same way, exposing alcohol to the action of the ferment known as the mycoderma aceti, acetic acid will be the result.

The air is full of germs of ferments differing from the alcoholic leaven. Expose milk to the air and the coagulation will take place; small globules of butter appear—the butyric acid fermentation. Within a short while larger organisms are seen, wriggling in swarms through the preparation. In curdled milk are found other organisms, linked together as beads on a string—that is the *lactic acid fermentation*. Examine putrefying milk and it will be seen to swarm with millions of small and larger germs, showing wonderful alacrity of motion. Keep your milk from the influence of the atmosphere, or boil it, so as to

kill the germs within it, and it will remain sweet, the germs being destroyed.

Expose meat to the atmosphere and it will soon putrefy; it will swarm with the germs of putrefaction and will soon stink. Keep the germs away and it will not putrefy.

Thus we begin to see that within the world of life to which we ourselves belong there is another world requiring the microscope for its discernment; but which, nevertheless, has a most important bearing upon our welfare.

Gathering these facts together and analysing them, we see that there are two elements always in action—a seed and a soil. The seeds are floating continually in the atmosphere about us. The soil is the particular substance upon which these germs fall, and at the expense of which they grow. It follows, also, that the greatest analogy exists between these various germs in the atmosphere and the seeds of various plants that may be wafted by the wind from one spot to another, and which develop when they happen to fall upon a suited soil.

Another fact is, that just as when you sow corn corn is reaped and not barley, so each particular germ grows its particular kind. Supposing you take a handful of seeds of various flowers and sow them in the same soil, then the different plants will grow alongside of one another. So also, if various sorts of germs have access to the same soil, they may grow plentifully together—as takes place in putrefaction, where germs of many kinds are seen growing, and decomposing the soil upon which they grow, liberating, not carbonic acid—as in fermentation—but sulphuretted hydrogen, the foul smell of putrefaction.

All germs will not grow on the same soil, just as all seeds will not grow on the same ground—some plants being indigenous to some countries, and others to different climates.

But a very astonishing fact is that one germ, after developing in a particular soil, may leave that soil in such a state as will render it favorable to the development of a germ which could not have developed there before. Such is indeed the case with the mycoderma aceti, which could not have developed in the sweet solution. First the yeast plant developed there, changing the sugar into alcohol, and now the mycoderma aceti, falling into the alcohol, grows abundantly, changing this alcohol into acetic acid, or vinegar.

The most important and practical portion of the whole knowledge of the nature and development of micro-organisms is the study of the changes incident to their growth in the soil upon which they develop. The yeast plant left the sugar changed into alcohol, whose chemical nature and physiological effects are quite different from sugar. The mycoderma aceti has changed the alcohol into vinegar, whose chemical nature and physiological effects are vastly different from alcohol. Likewise the lactic acid germ has produced in milk which was once sweet a substance, lactic acid, having corrosive properties, and which curdles the milk.

This new product, which results from the decom-



position incident to the development of a germ, is called in medicine a ptomaine. When germs are absorbed from the atmosphere and produce certain diseases, the albuminoids are decomposed within us, and this ptomaine or fermentative product is the chemical poison formed, which, being resorbed by the economy, produces those physiological symptoms characteristic of a disease.

And would a substance not putrefy without the action of germs?—in other words, is there such a thing as spontaneous generation? Tyndall's and Pasteur's admirable researches have set this question at rest. One will suffice. Having made veal broth, Pasteur placed it in a round vessel with but a small aperture. This was raised to a temperature of  $115^{\circ}$  C. for half an hour, so as to destroy all the germs within it, and the tip end of the flask was soldered, so as to prevent further air from coming in contact with the broth. A number of flasks so treated were placed aside. I have one in my possession thus prepared many years ago by Pasteur himself, and the contents are as pure as the day of its preparation. This shows conclusively that by heat he had sterilized the liquid and interior of the flask, and having soldered the end of the flask, thus preventing any germs of the atmosphere from having access to the fluid, there was no possibility of life developing within it; hence it remains pure, and is likely to remain pure indefinitely.

Now this simple experiment was a master-stroke of genius, for on it is founded our whole system of modern pathology and hygiene.

Do we wish to stop fermentation, putrefaction, contagious and epidemic diseases? We must repeat Pasteur's experiment. Sterilize first. Then prevent the germs from having further access to the parts thus purified.

Strange to say, this process of purification was applied to the canning of goods before it was practically applied to scientific purposes. In fact, canned goods of all sorts are prepared exactly after the manner of Pasteur's broth-experiment. They are raised to high temperature and kept in air-tight vessels. And what occurs when canned goods become spoiled? Simply the germs of the air have gotten into the goods, whether through some small aperture in the vessel or sufficient heat was not applied at first to destroy them.

Lister, in England, was the first to make a practical application of this to suppuration in wounds. He saw the analogy between the foul smell of a suppurating wound and the processes of putrefaction, and concluded that, should he succeed in destroying the germs which had started this putrefying process, and should he prevent further germs from having access to the wound, the putrefaction would cease, and the wound would heal kindly without suppuration. This he did by sterilizing the wound.

There are two ways of sterilizing: by (1) heat; (2) by chemical agents, carbolic acid, sublimate, etc., which have the property of destroying the vitality of most micro-organisms; and, when used in proper strength, do so without impairing the tissues with which they come in contact. The wound is then cov-

ered with several layers of cotton that has been sterilized or purified by heat, and this prevents the germs of the air from having further access to the wound; for as these germs fall upon the outer layers of the cotton they are caught by the meshes of the small cotton fibres and are not allowed to get any nearer the wound; during this time the normal and unimpeded process of repair goes on, and healing takes place without suppuration or putrefaction produced by germs. And by this glorious discovery Lister has blessed humanity with a reduction in mortality from major surgical operations, a mortality reduced from fifty per cent. before the days of antiseptics to two or three per cent. at the present day in the best conducted hospitals. Besides, it has widened the domain of surgery, bringing to the surgeon success in such operations in which he could not hope for success should suppuration take place.

Applying the same principles to dental surgery, which is a special branch of general surgery, we are struck by the frequency of processes of putrefaction or fermentation in the mouth. And why? Because the germs of the atmosphere, which we constantly breathe through the mouth, lodge upon some remnant of food buried in the sulci, fissures and proximal surfaces of the teeth, and find there a suited soil accompanied by heat and moisture; these germs develop and cause putrefaction, as evidenced by the foul odors from the mouth. Besides putrefactive processes, a fermentative process may also take place in the presence of sugar, which produces a corrosive element that destroys the enamel. The germs sink into this impaired spot, and the same deleterious agent being generated there, the process of decay attacks the dentine, the pulp, and an extensive cavity follows. Such being the case for a healthy tooth, well paved with enamel, the process is a much easier and more rapid one when, through some accident, a mechanical abrasion already exists.

To the honor and credit of Prof. W. D. Miller, of Berlin, be it said that he was the first to discover that the corrosive substance so deleterious to enamel, and which results from fermentation in the mouth, was lactic acid, which enters into composition with the calcium salts of the tooth, producing a lactate of lime.

This being the case, as a student of pathology and practitioner in surgery I conjure you to apply to your special branch of surgery the principles of antiseptics that Lister has applied to general surgery, vouching that you will meet the same grand success.

To reach this end, sterilize! and prevent the further access of germs to the parts. Sterilize with acid sublimate solution, destroying the organisms at one sitting. But when the pulp is dead, use the heated platinum broach in the root canals; then use the antiseptic solution, which will penetrate the minutest nooks of the cavity and destroy those few germs that have perhaps escaped the heat. Finally, plug the tooth with aseptic or antiseptic filling. And, gentlemen, as a physician, knowing how many general disorders, gastric and others, are caused by germs that found originally a brooding place in the mouth, I implore you to give the question of oral disin-

fection your most scrupulous attention, feeling confident that a rational and persistent use of the antiseptic solutions now within our reach will afford you the fullest satisfaction, for in your treatment you will meet the same glorious success as is achieved in surgery as practised at your doors.

\* \* \* And now, that we have reviewed the various phenomena of fermentation, we see that, in the eternal laws of the universe, that fermentation was destined as a power for good, and like electricity and steam, it vastly benefits our existence, if only rightly understood and maintained within its proper bounds; that most of the harm to humanity resulting from fermentative processes is due to our still incomplete mastery of its laws; and that, with the present strides of science, we will completely overcome these micro-organisms or fermentative agents that are deleterious to man and his surroundings.

Such is the triumph of the scientific age in which we live, that has disclosed a world about us which we know not of—a world of beings consisting of enemies as well as benefactors, in constant and intimate relation with each of us.

We know of numberless stars above, infinitely large; but this newly-discovered world of infinitely small beings, its laws and purposes, is to me not a lesser index to that Power, the Author of them all.

That God which ever lives and loves.  
One God, one law, one element,  
And one far-off divine event,  
To which the whole creation moves.

1617 ARCH ST.

### CRIMINAL RESPONSIBILITY IN NARCOMANIA.<sup>1</sup>

By NORMAN KERR, M.D., F.L.S.,

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IN some countries, as in Germany, Italy or Switzerland, there is a difference in the penalties inflicted by the law for crimes committed in a state of inculpable, as distinguished from culpable, intoxication. In most countries, as in America, England and France, the law does not officially recognize such a distinction. There have been occasions when English judges have even gone so far as to declare, following the ruling of the Spartan lawgivers, that drunkenness is an aggravation of the criminal act, and ought to call down additional punishment.

But the comparatively recent revelation of medical scientific research that there is often a diseased condition of the brain in individuals guilty of either a sudden and unexpected outrage of the laws of decency or morality (or of a continuance of such outrages), while affected by alcohol or some other anæsthetic, has not been without influence on the administrators of justice. Jurisprudence was constructed at a period when no abnormal physical state in inebriety was suspected, except, by perhaps a few rare scientific inquirers, who were far in advance of their day and generation. Scattered here and there in the annals of English criminal procedure are deliverances from

<sup>1</sup> Read before International Congress of Medico-Legal Societies.

the judicial bench, as well as verdicts, which attest the growing influence of the discoveries of pathology and physiology on the humane, more merciful and withal just legal treatment of the diseased inebriate.

In one case, two men were going home from a public house drunk. It was believed that the one as a joke tried to rob the other. But the prisoner was held to have been under the delusion that he was attacked in earnest by a real thief, and though he killed his friend, was acquitted. The judge said that the accused had clearly acted under the impression that his life was in danger, and under these circumstances could not be held to be criminal (*Reg. v. Price*, Maidstone Summer Assizes, 1846).

This ruling would cover a large number of accusations for capital and non-capital offences. It would include many crimes committed during an attack of delirium tremens, for example. All the injuries to persons inflicted by the alcoholic trembling deliriate, which have come under my notice have been the act of a person under the delusion that his life or liberty was at stake. He believed that some one was after him, was trying to rob, maim, imprison or kill him, and in his terror he violently assaulted his presumed assailant. In other cases, he has injured persons unintentionally by clutching at them or clinging to them in the acme of his fear.

On one occasion, at sea, I had a very narrow escape from strangulation at the hands of a man suffering from delirium tremens. As I was about to leave his cabin, he was so afraid of my leaving him that he, while my attention was diverted from him for a second, had my trachea compressed by one arm in an iron grip of despair and frenzy (I being jammed up in a corner) with his other hand rigid on the door handle. I was helpless and voiceless. Nothing saved me from impending death but the being able to control him by my look, with the consequent relaxation of his grasp, when I at once opened the door.

There have been a number of acquittals in charges of murder during delirium tremens. One of the most notable of these was the case of *Reg. v. Burns* (Liverpool Summer Assizes, 1865). The accused had murdered his wife. After the commission of this deed he appeared quite calm, and stated that he knew what he had done. His reason for killing his wife was that she was in league with men concealed in the walls. The jury acquitted the prisoner, on the ground laid down by Baron Bramwell that, though the accused might have known that the act was killing and was wrong, he was laboring under a delusion which led him to suppose that this delusion, if true, would have justified his action.

Another person was acquitted of feloniously wounding two individuals, on the plea that he was under the impression (from delirium tremens) that his house was being broken into (*Reg. v. Chaplin*, Warwick Assizes, November, 1878).

Yet, under almost similar circumstances, the accused have been found guilty, as in the following case: One man killed his friend, both being drunk, under the delusion that his friend was some one else, who was attacking him (*Reg. v. Paterson*, Norfolk Dent Assizes, 1840).

Mr. Justice Manisty, in *Reg. v. McGowan* (Manch. Assizes, October, 1878), where a man was found guilty of murdering his wife, though the medical evidence was to the effect that he was laboring under temporary disease of the brain from excessive drinking, ruled that disease produced by one's own act, such as delirium tremens, was no excuse unless the disease became permanent.

On the whole, though the plea has in some cases been unavailing to avert condemnation, there has of late years been an increasing disposition in both judge and jury to accept a delusion of delirium tremens as a valid ground of acquittal. This is undoubtedly a step in the right direction. In some cases, the accused may not be wholly unconscious of the nature of the act, or of the difference between right and wrong; but he is beyond his own control, and is powerless to resist the dominating homicidal or suicidal impulse even in this partial consciousness of his actions. This delirium is as pronounced a disease (however short lived) of the brain as is the delirium of typhus or typhoid fever. There ought to be no more criminal responsibility in the one disease than in either of the others.

It seems to me that on this point most legal and medical experts will be agreed. A uniform ruling to this effect would be an enormous gain to the successful administration of our criminal law. No drinker desires or intends to have delirium tremens. This disease (a leading characteristic of which is abject terror) overtakes him and comes upon him unawares.

To only one more point of medico-legal interest will I allude: viz., to the desirability, in fact the necessity, if justice is to be done, of an inquiry into the health history of the accused. Though I treat specially of criminal cases complicated with inebriety, this procedure would often be judicious when there is no narcotic complication.

A sober, sedate, conscientious and well living man or woman suddenly commits some gross breach of decency or order—is guilty, say, of indecent conduct, or of theft—without an apparent motive. In not a few cases which I have seen (in some of these cases no criminal proceedings were taken, in others there was a conviction or a reprimand) the immoral act, the theft, or the unexpected drunken outbreak proved to be the first symptom of paralysis of the brain. What a terrible blunder to punish such a person as an ordinary criminal! The disgrace, the prison surroundings, the jail curriculum, have degraded the *morale*, often made a confirmed criminal of the convicted, and accelerated the paralytic's march to the grave, the existence of an underlying disease having never been suspected until the incurable stage had been reached.

Such a neglect to inquire into the past health of the accused has often been as dishonoring to law and as costly a mistake to the community as it has been fatal to the individual. A more enlightened procedure would have detected and recognized the presence of brain disorder in a considerable proportion of cases. The result would have been that, though there would have been fewer convictions for crime, many persons would have been preserved from

a criminal career, the heavy expenses incurred for not a few habitual criminals would have been saved, a large amount of brain disease might in its earlier and more curable stages have been cured, and quite a host of useful lives might have been restored to the community, while the dignity, power and influence of the law would have been greatly enhanced.

All these considerations apply with added force to the urgent need for an elucidation of the HEREDITY of the accused. Especially where inebriety is present should the family history be sought out. There are many individuals so handicapped, so permeated with the alcoholic or other inebriate inheritance transmitted from their predecessors, that the slightest sip on any pretence of an alcoholic intoxicant is apt to precipitate them into intoxication, with the risk of *incontinently and not of their own intent* being guilty of some criminal offence while under the influence of the anæsthetic. There are others born with a brain so abnormal that the drink-impulse or the drink-crave is apt to be developed by any extraordinary disturbance or exhaustion of their nerve system. There are still others whose moral control is so deficient from birth that only with the greatest difficulty can they resist temptations from without or morbid impulses from within.

I am glad to be able to adduce a recent deliverance from the English bench in illustration of the importance of giving due consideration to heredity, in a case with inebriate complication. (*Reg. v. Mountain*, Leeds Assizes, 1888.)

A single man, aged thirty-four, was tried for murdering his mother with prolonged violence, in the presence of a terrified domestic whom he had locked up in a room with them all night. He had suffered from delirium tremens about five years before, and for the last year had been subject to fits of excitement, and to delusions as to his life being threatened. He persisted in the statement that the victim was not his mother. One medical witness testified that at the time when the deed was done the perpetrator was suffering from *delirium tremens*, the other that the illness was *mania a potu*. Evidence was given showing an insane heredity. The judge, Baron Pollock, said that though no man could be excused on the mere plea that he had reduced himself to a want of reason by drinking, there were other circumstances here. One was that through hereditary influence the accused's infirmity and mental deterioration possibly did largely account for the criminal act. Another circumstance was whether, apart from drinking, the man was the subject of delusional insanity. The judge very wisely met the objection that if the prisoner had been an abstainer from alcoholic drink, he would not have been guilty of matricide; that as a certain amount of alcohol, with his predisposition, made him a murderer, the accused should not have taken the little drop that upset his reason. Baron Pollock replied that the last man to know his own weakness is he who has a weak mind; that such an one cannot argue as doctors argue for him. The learned judge charged that if, at the time when the murder was committed (though the accused had been a drunkard and had had delirium tremens) he had



taken only such a quantity of liquor as an ordinary man could take without upsetting his reason; and that the insane predisposition was the main factor, although the drinking of a small amount of alcohol was a contributory cause, the plea of irresponsibility, on the ground of insanity, was good. Happily, the jury returned a verdict in accordance with the charge of the judge.

In insanity it is now generally conceded that there is a lesion of the brain, though this cannot always be detected on a *post mortem* examination. There is now as much evidence to show that there is a brain lesion in inebriety, that diseased condition which I have ventured to call narcomania (a mania for intoxication by any anæsthetic narcotic). In acute mania, as in delirium tremens, this lesion is usually quickly repaired. In some forms of mental unsoundness and of narcomania, this lesion is so persistent that a prolonged course of treatment is required, while in a sensible proportion of cases the lesion is practically irreparable.

In the interests of justice, as well as in fairness to the accused, in all cases of alleged criminal offences committed either while under the influence of an alcoholic or other anæsthetic, or by a known inebriate in a non-narcotic interval, there ought to be a skilled inquiry into the previous health history and heredity of the panel at the bar.

## Hydrotherapeutics.

### A PLEA FOR THE PRACTICAL UTILIZATION OF HYDROTHERAPY.<sup>1</sup>

By SIMON BARUCH, M.D.,

Attending Physician New York Juvenile Asylum and Manhattan General Hospital.

(Continued from page 731)

THE question I now propose to discuss is "Why has the remedial use of water maintained its hold upon some of the most able physicians in every century of medical history, despite the prejudices of the lay and medical public?"

Why have the vicissitudes of hydrotherapy not swept it from the therapeutic field, as has been the fate of many more highly vaunted remedies? Blood-letting, that remedy which for centuries towered above all others and promised to resist the onslaught of its ablest opponents, is an example of the fate of a remedy which lost its foothold so soon as the fierce light of modern physiological research exposed the fallacious reasoning on which it was based.

Hydrotherapy, on the contrary, has maintained its position not only on clinical grounds, but it is to-day more firmly entrenched *because it is based upon well ascertained and exact physiological facts*, the application of which forms the most brilliant chapter of clinical medicine.

The more fiercely the light of modern research bears upon it, the more glaring become its points of

vantage over many other remedies, *which, however, it should never be permitted to entirely displace.*

To demonstrate the validity of this claim, there is a wealth of material at my disposal, from which you will permit me to select a few striking evidences. The works of Winternitz, Schueller, Roehrig, Naumann, Chapman, Delmas, Thennes, Pleniger, Bottey, Scheuer and others, from which I am greatly indebted, teem with experiments on animals and man which must prove to the unbiased observer that by means of the thermic and mechanical effects of water prompt and decided modification may be impressed on all the functions of the body. Let us take, for instance, the most simple experiment of applying cold water to the skin. May we not arouse a patient thus from syncope? May we not modify tactile sensation to any extent, from the mildest effect to complete abeyance? May we not diminish the caliber of bloodvessels to any extent by cold, until their coats lose their tone altogether, or until they are dilated again by reaction?

Surely these effects and many others can be so positively controlled by no medicinal agent. We have physiological grounds, not alone for these, but for many other effects.

Naumann has by experiments on frogs established such definite results on the subject of the action of cutaneous stimuli that Winternitz accepts them as laws. He separated the head of a frog from his body, leaving them connected only by the medulla; he also severed one leg, after preventing loss of blood by tying the vessels, so as to leave it connected only by the sciatic nerve. He now applied thermal and other stimuli to the foot of the partially severed leg, while he observed the circulation of the mesentery under the microscope. Having observed certain changes in the latter, he formulated them as follows:

1. The effect of irritants is produced by reflex action from the central organ.
2. These irritants exert considerable influence on the heart and vessels.
3. In proportion to the irritability of the individual, powerful cutaneous stimuli lessen and weaken cardiac action, dilating the vessels.
4. Relatively weak stimulation increases and strengthens cardiac action and narrows the vessels.
5. The changes produced by long-continued skin stimulation last some time; longer if stimulation has been prolonged: even one-half to three-quarters of an hour beyond time of stimulation.
6. Relaxation of pulse following powerful stimulation of the skin often attains its maximum at once; at other times not until its conclusion.
7. The excitant effect of weak cutaneous stimulation continues after its conclusion; but it is also followed by a less pronounced relaxation.
8. Powerful cutaneous stimulation is always followed, after a period of warming, by a cooling down of the body, which lasts often over an hour, sometimes occurring during the stimulation, but as a rule after its cessation.

Schueller's observations on the circulation of the pia mater of a rabbit, which he had trephined for the purpose, are definite and unimpeachable, and explain

<sup>1</sup>Read before the New York Academy of Medicine, November 7, 1889.



many of the hydrotherapeutic processes. A cold stream of water applied to the belly and back of the rabbit was at once responded to by the bloodvessels of the pia mater, contracting them if brief, dilating them if prolonged. A warm compress applied to the belly contracted the vessels. Cold baths produced dilatations of the vessels in proportion to the size of the body immersed. Only, after prolonged immersion in cold water, a contraction of the vessels ensued as the result of the reduced blood temperature. The vessels continued contracted for about half an hour. If the body of the rabbit was immersed in warm water, a decided contraction of the vessels in the pia mater ensued, and they remained somewhat contracted for some time. His experiments with the cold pack on rabbits agree with the effect of these applications on man.

These experiments have been verified in man by Tranck, who in Marcy's laboratory, by means of self-registering instruments of precision has demonstrated that, if one hand be placed in cold water for two or three seconds, the other increases in volume, the increase continuing about a minute. Winternitz also verified Schueller's experiment on man by measuring the size of the arm by a pletismograph, while the patient sat in a tub, receiving a cold affusion. The effect was a sudden increase of volume. The blood was then proved to be driven from one part of the body to another. He has also demonstrated that the application of cold water to certain definite parts of the surface exercise a positive influence upon definite vascular areas. Then cold applied to the feet affected the intracranial circulation; applied to the thigh, the pulmonary circulation; and to the back the mucous surfaces.

But not alone have these effects been demonstrated on the smaller vessels. The heart, too, has been proven to distinctly respond to temperature impressions upon the periphery, and that this result is brought about by reflex action is shown by Roehrig, who failed to obtain any action upon the heart when the vagi were severed. He demonstrated on the rabbit that moderate cutaneous irritations increase cardiac contraction, while they diminish them if they are intense and prolonged. These experiments, too, have been verified in man by Winternitz in Vienna and Delmas in Bordeaux, the only cities where hydrotherapy is practised in regular hospitals. Roehrig also had previously utilized his physiological experiments in the treatment of some heart diseases, in which cool baths ( $27^{\circ}$  to  $24^{\circ}$  C.) reduced the frequency of the pulse, and he deduced from their application in other diseases also a confirmation of his physical experiments.

We therefore know positively that low temperatures, briefly applied, accelerate the heart's action, and that a prolongation of low temperatures diminishes it, as does also the reaction after a brief application. Also, that the application of high temperature to the skin produces a decrease of pulse rate, which is quickly followed by an increase. By the application of water of various temperatures to the surface for a lengthened period we obtain the direct effect of the cooled blood upon the heart. Experiments hav-

ing demonstrated that heat applied directly accelerates, and cold diminishes, the heart's action, we can, by cooling the blood in fevers, produce an invigoration and slowing of the heart. And this is borne out by clinical experience, as we shall show later.

If, farther, as has been demonstrated again and again by the sphygmograph, the vascular tension may be modified at will by hydrotherapeutic procedures, we have another proof of our powerful influence over the heart's action. Indeed, so decided is this influence upon the entire circulation that hydrotherapy really reduces it to a hydraulic problem. As the blood stream moves in a definite, closed system, rapid changes in it can only, in the normal, uninjured state, be induced if the propulsive action of the heart is rapidly increased or decreased, or the capacity of the vascular area suffers fluctuation. All this has been accomplished by physiological experiment and verified by clinical experience. [The well-known tapping experiment of Goltz proves absolutely the powerful influence upon blood pressure and accumulation of blood in certain areas, which the removal of large masses of blood from other areas produces.]

When it is remembered how perfectly we can control these hydraulic changes by means of reflex as well as direct effects, through the agency of water of different temperatures, and how these changes may be varied upon an almost exact scale by careful attention to the degrees of temperature difference between the water and the recipient; to the degree of sensitiveness to impressions of the latter; to the extent of surface to which the application is made, etc., it is evident that we possess in hydrotherapeutic procedures a most *flexible* measure for influencing the vascular system.

The effect of thermic influences upon the temperature of the body is, perhaps, better understood than the effects referred to above. That the temperature of the body may be reduced has been so often demonstrated that all physicians are familiar with the fact; also that the human body is not affected by cold and heat like an inanimate body, but that it reacts against these thermic stimuli.

But it must be remembered that the vital processes by which the system endeavors to protect itself against thermic disturbing influences, are also definitely ascertained. The familiar example of shriveling of skin when extreme tolerable heat or cold are applied to the surface, is due to the vascular spasm and constricting effects of these thermic irritants. This vascular spasm protects the internal organs against too rapid cooling or heating. The secondary effect of cold or hot applications to the cutaneous surface are so well known that I need only remind you of them. Cold, if evanescent, is followed by reaction, which dilates the vessels forming heat, if evanescently applied, it is followed by dilatation, due to passive relaxation. When the superficial vessels contract in response to a more prolonged application of cold, there is a prolonged hyperæmia established in the nearest muscle tissues, which protects the body against the rapid invasion of the cooling blood; being thus supplied with more blood, more heat is produced. The prolonged application of external

heat, on the contrary, produces—as is familiarly known—an increased vascularization, and thus enhances its functions, with the result of increasing perspiration. A larger quantity of blood is retained in the relaxed vessels if the applications be prolonged, reducing the quantity in the muscles and other organs, and thus diminishing heat production.

By means of the calorimeter Winternitz has practically demonstrated that the going off of heat depends upon the cutaneous circulation. He has absolutely proved that the most active conditions of the skin functions may compensate three and a half times of the normal heat loss; or it may be increased three and a half times. As the great bulk of the heat is produced in the voluntary muscles which form about one-half of the entire body, it follows that the increased activity of the muscles, aroused by the external application of cold, is capable of producing an increase of heat.

Liebermeister discovered this in man in 1859, and it was confirmed by Hoppe's experiments on dogs, and later by Kœnig and Juergensen. But if the application of cold be prolonged or intense, the inner temperature sinks—as shown by Juergensen—rapidly. Liebermeister's experiments demonstrated that baths of sixty-eight to seventy-five may be borne fifteen to twenty-five minutes ere the temperature begins to sink.

Delmas and Bottey have demonstrated the flexibility of hydrotherapeutic procedures on these principles. If the cold is applied briefly with a douche, according to Delmas, we have an intense sensation of cold, followed quickly by a general feeling of warmth; but during the reaction which ensues, the temperature continues to fall from  $0.6$  to  $1.0^{\circ}$ , for two hours after the douche, especially if the patient exercises after it. Hence the simple sensation of cold or heat is not an index of the actual body temperature in health, any more than it is in the cold stage of an intermittent.

According to Bottey, if the douche is very cold ( $8^{\circ}$  C., for instance) and lasts two or three seconds only, the fall of temperature is preceded by a brief period of elevation of  $0.1^{\circ}$  or  $0.2^{\circ}$ ; but if the douche lasts ten seconds, there is no elevation at all, as Delmas has shown, but a fall, lasting several hours.

Upon the condition of the blood, also, the action of cold has been determined to be pronounced. Thernies has shown (in 1878) by very thorough investigations with Hayem's hæmatometer and calorimeter, that the number of blood globules was not only increased by the douche, but that their quality was improved. This mathematical demonstration, repeated by Winternitz, is verified, as I will have occasion to show by clinical experience.

The influence of thermic agents upon the nervous system has been so often demonstrated that I need only refer here to any special investigations. Physiological experiments have shown again and again that we may stimulate or depress it by reflex action.

47 E, 60TH STREET, NEW YORK.

The typhoid fever is subsiding in Philadelphia, there having been but seven deaths last week. The general death-rate of the city is very small at present.

## The Polyclinic.

### MEDICO-CHIRURGICAL HOSPITAL.

#### EPITHELIOMA OF NOSE.

**HISTORY:** Patient had always had a dark spot on the left side of the nose. It began to give him trouble about a year ago. Itching and slight pain occurred at times. The spot became red and inflamed, and, breaking down in the center, formed a small ulcer, which began to spread. This is a curable form of cancer, if treated in time. A concentrated solution of zinc chloride was applied last Wednesday, and allowed to remain for a few minutes, after which a dressing of ung. zinci oxidi carbolizat. was applied. This has afforded excellent results so far, and an operation is not considered advisable until this treatment fails. The chloride of zinc solution was ordered to be applied daily, with the same dressing as before.

—Pancoast.

#### OPERATION FOR THE RADICAL CURE OF HYDROCELE.

Patient was a man, about sixty years of age, presenting a pyriform swelling on the left side of the scrotum, which is largest at the depending portion, translucent, and transmits an impulse on coughing. The patient had already been tapped several times, but the tumor returned so rapidly that it was decided to attempt a radical cure. Patient stood with his back against a table, and a broad-shouldered lancet was introduced into the hydrocele. A straw-colored liquid of high sp. gr. poured out. The tunica vaginalis was then scraped thoroughly, and the lancet withdrawn. This method is preferable to the injection of tincture of iodine.—Pancoast.

#### URETHROTOMY.

Patient was a man, about middle age, with a history of having passed a stone from the bladder, some years ago, which lodged near the meatus, and was removed through an incision, the meatus being too small to admit of its further passage. Urine was dark, strongly acid, without albumen or sugar, and with sp. gr. of 1.030. It contained acid phosphates, pus, epithelial cells, oxalate of lime, and uric acid. Patient was moderately well nourished, but melancholy, and suffering from considerable dyspeptic trouble. Acetate of potassium, gr. xv, three times a day, largely diluted, was ordered some time ago, and to-day the acidum nitro-hydrochloricum gtt. v, diluted with water, three times a day. Also quinine, iron, and strychnine were given as a tonic. A lotion of borax and glycerine was applied to the glans penis to soften any inflammatory deposit. The bowels were kept open with salines, and a full dose of quinine given to prevent shock.

The penis measured 11 cm. in circumference, and was therefore expected to have a caliber for the urethra of 35 mm. There were two strictures present—the first a tortuous one, near the meatus, and the second a linear one, about three inches from the meatus. The meatus was, a few days ago, enlarged with a bistoury and the tortuous stricture dilated.

To-day a solution of cocaine was injected into the urethra and a Gross' urethrotome passed, and the stricture divided. Then an Otis' divulsor passed into the urethra, set at 35, and the stricture forcibly dilated. If this plan fails, the operator suggested a trial of electrolysis; but he thought this would be all that would be necessary, the dilation being kept up by passing the sound.—*Goodman*.

A letter-carrier complained of vertigo, and headache, which were temporarily relieved by cardiac depressants. Examination showed that he had mixed astigmatism of one eye, and irregular astigmatism in the other, probably due to irregular curvature of the lens.—*Fisher*.

New growths are the results of irritation, which is always due to a dead, chemical agent, or to a living, vital one, the latter acting mechanically, or through the medium of noxæ generated by it. This fact has put a new face upon pathology.—*Laplace*.

Not a single case has yet been recorded in which the tubercle bacillus, having been discovered in the sputa, has totally and finally disappeared during the patient's life.—*Laplace*.

Wounds of the knee joint once considered essentially fatal, are now, under antiseptic measures, no more dangerous than cuts of the finger.—*Laplace*.

Out of several hundred cases in which the bacillus tuberculosis was demonstrated in the sputa less than two years ago, not one is now alive.—*Laplace*.

The disease formerly known as the white swelling, simple, or with fungosities, we now denominate local tuberculosis of the knee joint.—*Laplace*.

The experience of half a century has demonstrated that there is no better local antiphlogistic than lead-water and laudanum.—*Garretson*.

#### FRACTURED RIBS.

In the treatment of fracture of the ribs, Dr. Morton, of the Pennsylvania Hospital, has discarded adhesive plaster on account of the difficulty of changing or removing it, and because it is uncomfortable to the patient, especially in hot weather. He uses an extemporaneous corset made of canvas, fastened with lace strings. He takes the circumference of the chest four or five inches above and below the fracture, so as to make the apparatus about ten inches wide. It is made a little long so that it may be drawn tighter after it is applied. There are two rows of hooks, and lacing-strings are put through them to draw them up. The instant that it is put on and properly adjusted the patient is free from pain.

#### PHILADELPHIA HOSPITAL.

##### AORTIC ANEURISM.

I HAVE here two cases of unusual interest, the first of which presents a history as follows: White woman, aged thirty-one, and a domestic, has used liquor for fifteen years; is married and has no children. In 1887 she began to feel shortness of breath upon exer-

tion, and had pain in her left elbow and sides. She was apparently cured. She returned this year with a throbbing pain in her chest, palpitation of the heart, and a full feeling in the head, with dizziness. I find a pulsating tumor at the second interspace, one inch from the left border of the sternum. The patient has an aneurism of the aorta, but it is rarely that they are found to the left of the sternum, as in this case. There is hypertrophy and dilation of the left auricle, with the sound of a double bruit. With inspiration there is evidence of an cedematous condition of the lungs and moist rales. We must take into account the cause of this trouble. Syphilis may produce it, but this is negative here. Use of alcohol is the next most common cause, and is a slow process. It is probably the cause in this case. Rest is to be enjoined that the heart may not beat so much, and thus relieve the force of the circulation. The starvation treatment consists in giving as much food as will merely sustain life in the hope of thickening the blood, and causing coagulation in the aneurismal sac. Electrolysis cured one small aneurism of which I know. This woman's treatment has been the bromide of potassium; compound infusion of gentian, bismuth sub. nit., and paregoric for diarrhœa, as well as potassium iodide ʒjss daily.

The next case is a white woman, aged forty-four, a domestic. She menstruated at fourteen. Two years ago she took a pain in the left arm above the elbow, which was worse at night. The arm felt as though encircled with a vice, and the pain extended across the chest and angle of the scapula. The pain is sharp and stabbing in character. Pulsation is felt in the chest, with paroxysmal dyspnœa and pain. I find an aneurism of the aorta at the left of the sternum, which is larger and more tender than in the preceding case. She has had a cough for two months, which is due to the pressure of the aneurism on a bronchial tube. She has received the same treatment as the other case; but takes of the potassium iodide gr. xx, as well as nitrite of amyl for the dyspnœa.—*Curtin*.

SOME DISEASES RECENTLY DESCRIBED.—*Disease of Morvan*.—This is a nervous disease that begins with numerous felons, producing deformities of the fingers. There are, at the time, trophic disturbances of the skin, muscles, bones and anomalies of sensibility. Gombault, at an autopsy, found diffused sclerosis of the spinal cord.

*Syringomyelia*.—This disease begins a progressive atrophy of muscles of the hands, gradually progressing to those of the arms and chest, sparing the face and lower extremities. There is abolition of thermic sensibility of the skin and diminution of dolorific, the tactile sense remaining intact. It depends upon a neoplasm of the anterior portion of the spinal cord, especially of the cervical region.

*Acromegalia*.—This disease develops at any age. The principal symptom is a hypertrophy of the extremities, sometimes the fingers only being affected. This disease proceeds symmetrically. According to some authors, it is dependent upon an alteration of the thyroid gland and a persistence of the thymus.

—*Archivio de Ortopedia*.



# The Times and Register

*A Weekly Journal of Medicine and Surgery.*

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WILLIAM F. WAUGH, A.M., M.D., Managing Editor.  
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## THE ABUSE OF CHARITY.

THIS time-worn subject is being vigorously handled just at present by our British brethren, and for the last few months it has furnished many columns of amusing and instructive reading-matter in the *British Medical Journal*. A series of resolutions, coupled with a scheme for the establishment of a Public Medical Service, was introduced by Dr. Rentoul, of Liverpool, before the Leeds meeting of the British Medical Association. The Council took the matter in hand, and is now pushing it forward in a manner that promises some sort of reformation in regard to the abuse of the medical charities. The various branches of the Association have been requested to discuss the matter, and both collectively and individually to express their opinions directly to the Council or through the columns of the *Journal*.

There is general agreement that a reform is absolutely necessary. The three principal methods of affording cheap medical attendance to the poor now in vogue are all condemned for various reasons. The out-patient departments of the great hospitals are of no real advantage either to the profession or to the laity. The former are degraded into using it as a means of self-advertisement, and the latter are educated by it into some of the worst habits of pauperism. The way that patients come and go in a dispensary service prevents all chance of that close observation and careful treatment which might render it of real service, either to themselves or for the further advancement of science. As for their educational advantages to the student, dispensaries are not as beneficial as the well-filled wards of a good hospital. The disadvantages of this system, both in depreciating the returns to the general practitioner and in favoring pauperism, are quite self evident. The provident and club systems, whereby any person, who so desires, can pay a small annual contribution and then receive at any time the treatment of the attend-

ing doctor, are accompanied with still greater defects. For as none of these latter charities are entirely self-supporting, the treating of patients who may be members of them, and at the same time fully able to pay for private attendance, is a gross injustice to the people who benevolently subscribe for their maintenance, thinking that they are thereby helping the poor and needy. There is nothing so mean as the robbing of the poor; and if there are people contemptible enough to crowd those who are in actual want out of the benefits of the medical charity, and of the needed attention of the attending physician, they should be prevented from so doing in some way by the medical profession itself.

It is for this reason that Dr. Rentoul has elaborated his scheme, to be known as the Public Medical Service. There are many details connected with it which render it in its present form more or less impracticable. Its principal object is to determine by a "wage limit" who should and who should not be eligible for out patient medical aid, and then to charge in accordance with a schedule of prices arranged in harmony with this "wage limit." So determined is the Council of the British Medical Association to attempt to right the evil, that they have published on a separate page of the last *Journal* the plan and resolutions of Dr. Rentoul, leaving a blank space for each member to fill in with his own comments, and then return the same so that they may act for the advantage of all.

The first rule suggests that when a man and wife make 25s. per week and over, or a single person 20s. per week and over, they shall be ineligible for out-patient treatment at the medical charities—except in cases of accident—and that those earning a similar rate of wages shall be ineligible for "home visits," that is visits paid by the staff of the medical charities, to sick persons at the patient's home. It is further suggested, that in order that those who shall be excluded from the out-patient department of the medical charities may have the means of obtaining immediate and efficient medical, surgical and dental treatment and also medicines, a Public Medical Service be formed, embracing those wage earners who are making under 45s. per week, per family, and single persons under 30s. per week. It is recommended that in connection with this service, a periodic payment be made by the members during health; that a sliding scale of payments be made to their medical practitioners; that the minimum medical fee paid by such sick clubs be 6s. per annum per member; that the person proposed for membership pay a fee of 3s. 6d. for the medical examinations (whether admitted to membership or not) to the practitioner who so examines; that the sum of 1s. be paid for each certificate to the practitioner by the person who obtains it, and that the sum of 8d. be paid for each prescription dispensed. A schedule of charges for the general run of surgical operations and obstetrical cases has also been elaborated. Of course such a scheme meets



with considerable opposition, chiefly from those personally interested in the existing systems. The general practitioner and suburban doctors generally favor it, while the consultants of the large cities are significantly reticent in regard to the expression of any opinion. The House of Lords has been appealed to praying for an enquiry into the management of the Metropolitan Medical Charities; and if they take action reform of some sort may possibly follow.

We shall watch with interest the outcome of all this, but without wishing to be pessimistic, we are more than doubtful of its ultimate success, because of the general apathy of the profession. It is singular how indifferent medical men are, when called upon to act collectively for the protection of their own interests. They talk about charity and the blessed art of healing, and yet they forget that the greatest charity begins at home. It is proverbial how unbusiness-like doctors are, yet, at the same time, the well-known fact is anything but complimentary that the average doctor's family rarely enjoys the luxuries of life, and not unfrequently wants for the actual necessities. There is a good deal of vapid sentimentalism talked about the medical art. Why should the practice of medicine be more of a charity than the keeping of a grocery store? Both cater to human wants and the feeding of a hungry man is as noble a charity as the administration to a sick man of a dose of medicine. Knowledge certainly has a marketable value, and if we remove the incentive which springs from the reward that belongs to knowledge and skill, the inevitable result will be, as can here and there be discerned even to-day, to keep out of the professions the brightest intellects. Unlimited means will never make a man as shrewd an observer and as close a student as if he were forced to cultivate his intellect in the hope of acquiring the rewards of superior knowledge. Any biography will afford instances of the truth of this.

But charity is not always the score upon which doctors excuse themselves for neglecting to demand the just remuneration for their services. We have known of instances where medical men enticed patients from their confreres by offering to treat them at their offices gratuitously; and it is well-known how the dispensaries are used to "feed" the office practice of specialists. Hospitals, colleges and dispensaries are considered by many as good advertisements. Some one has jocosely remarked that in college-crowded Chicago "professors" are so numerous that a common doctor is quite a rarity, which reminded the same individual of an incident in Boston a few years ago, when a professor requested his friend not to address him as such upon the street, lest he be mistaken for a boot-black. At one time to be connected with a hospital meant particular ability in some department of medicine, but things have changed with the rapid growth of these institutions in our midst. The temptation to start a dispensary or open a private sanitarium has become simply irresistible. In all professions the

only legitimate advertisement is one's own ability, and rarely does an industrious man fail when he has that.

The whole question of medical reform, so far as the private practitioner is concerned, seems to us to depend solely upon the principle of supply and demand. A man who does not make a living and continually cries out against the charities, may be pretty sure that he himself is not quite up to the mark as to skill and tact. The dispensaries are abused, without doubt, but it is more than utopian to hope to suppress them or limit the attendance of the laity upon them. How is one to learn of a man's income, and so set the wage-limit? How is the matter to be equalized, even after one does learn it, since a wage earner's means is a relative factor according as he has a large family, is a bachelor or possesses a permanent or unsteady situation? It is rare that those who are at all able to pay care to be regarded as objects of charity, hence by admitting all applicants as charity patients to a hospital, we would rarely be obliged to turn away any because they were able to pay for treatment at home. Though we recognize the evils of our overgrown charities, and would like to see some reform introduced, by reason of which their benefits would fall to those who really deserve them, we cannot see any better plan for the present than that of simple competition. They cannot be regulated any more than ordinary trade, and for the state to manage them, would involve the passing of sumptuary laws.

#### A WARNING.

**S**URROUNDED as we are by all sorts of micro-organisms, we must be in a continual state of watchfulness to avoid every possible source of infection. Though we may be familiar with the causes of the infectious diseases, and up to a certain point know how to combat these causes, we are often so negligent as to fail to recognize them until they have exercised their baneful influence. In these days of antiseptics, one would almost imagine that there was not a ghost of a chance left for any pathological germs to enter the human system. Such is not the case, however. For it is not enough that antiseptics should be limited to the operating room only. When we remember what splendid opportunities are afforded for the transmission of these infectious diseases by the midwives, dentists, hair-dressers, and barbers who are ignorant of the nature of these diseases, and indifferent as to general cleanliness, we may well be surprised that so many of their customers escape contamination. It would be fortunate if all such occupations could be closely watched, and proper regulations enforced for the protection of the people; if antiseptics could be insisted upon or at least absolute cleanliness maintained. If in every case of infectious disease where trouble was positively found to have originated in this way, the midwife, dentist or barber could be made liable to fine and punishment, the

danger would undoubtedly be greatly diminished. The mere keeping of one's own shaving cup and toilet articles in these shops is not sufficient protection, for the hands and the finger nails are liable to carry the virus or germs from one individual to another. It is not a comforting thought that one's predecessor in the arm-chair may have been the victim of scabies, or that the barber's hands now rubbing our own head may have been scratching up nests of pediculi in the head of the man who has just gone out. It is not very solacing to imagine that one's dentist may be using an instrument which has just been employed in the mouth of a syphilitic. But since these occupations are indispensable to civilization and must needs be patronized, the only safe remedy would, of course, be strict supervision in regard to cleanliness, and so far as possible rigid maintenance of the best methods of antiseptics.

In 1864 and 1865 there was a kind of epidemic of syphilis in Paris, most of the cases of which were reported to the Société des Hopitaux, wherein the cause was clearly traced to the operations performed upon the nose and ears by a specialist, who did not trouble himself to thoroughly wash his instruments. Such negligence would of course not be tolerated at the present day; furthermore we should like to see such gross carelessness made a criminal offense.

It seems almost incredible, and yet it is a positive fact, that there are operators even to-day who disregard all the teachings of pathology and bacteriology, and either carelessly or wantonly use instruments and dressings that are not thoroughly antiseptized. Lancereaux has lately reported to the French Academy of Medicine two well-marked cases of constitutional syphilis, in which the infection could be directly traced to the instruments used by a surgeon in his earlier operations. In the first case, a man of robust physique and fifty-three years of age, whose previous history had been above reproach, the catheterization of the Eustachian tube was the beginning of the trouble. In the second, a woman thirty-six years of age, it was unmistakably traced to the operations of a dentist upon the upper jaw. In both instances, not only did the initial lesions pass through the usual stage, but later on all the usual secondary symptoms made their appearance in the most pronounced manner. The careful investigation of these two cases placed the diagnosis and origin of the disease beyond a doubt.

The lesson to be drawn is obvious enough, but it cannot be too vigorously enforced. Whether antiseptics be admitted as a necessity or not by the surgeon, absolute cleanliness should invariably be. In fact a surgeon known to be careless and indifferent in his habits should no more be allowed to perform an operation than an inexperienced student should be allowed to administer powerful drugs. No instrument should be employed without being thoroughly cleaned and subjected to heat, or better still the carbolic acid solution. Whether the sublimate solution

or any other antiseptic be employed in the washings and dressings, it should always be insisted upon.

If we fail to secure complete immunity from contamination in some of the humbler occupations of life, let us not have it said that medicine is in any way the cause of diseases which it is striving to cure.

## Annotations.

### A NEW REMEDY FOR DYSENTERY.

THE *Boletín de Medicina*, of Santiago de Chili, gives a notice of a new plant, which is said to be a wonderful remedy for dysentery and diarrhoea. The sketch was presented to the Chilian Medical Congress by Senores Daniel Carvallo and Emilio Eisene. The plant is named "*el bailahuen*," and its botanical title is "*haplopappus baila huen*." It is a native of the Cordilleras of the Andes, between 20 and 30 degrees of south latitude.

The shoots of the bailahuen are soft, glutinous and smooth, and the virtue of the plant lies in all parts. It is prepared as a tincture, a fluid extract and as an alkaloid. Its therapeutic effects have been shown in a number of cases of dysentery, indigestion, diarrhoea, metritis and sexual impotence. It appears that this Chilian plant possesses valuable properties in dysentery, operating somewhat after the manner of ipecac without its nauseating qualities and with a more durable result. After its use there is no need for a purgative to restore the bowel action. In other diseases referred to beside dysentery and diarrhoea, experiments have shown it to be valueless.

### CIVILIZATION vs. BARBARISM.

LANCEREAUX (*Revue de Therapeutique*) has opened a campaign against the outlying allies of the medical profession, the barbers, to compel them to keep their instruments in strictly absolute asepsis. Truly, it is not pleasant to reflect that the cushioned chair in which you rest has just been occupied by a sufferer from pediculi, the arms on which your hands rest just sustained those of a boy with scabies, the razor has shaved a hundred men, cutting through pimples and scraping off epidermis with possibilities of tinea, syphilis, tuberculosis, pemphigus, sycosis, etc., etc.; while the soap-cup and brush! Can those things ever be really clean?

### AN EPIDEMIC OF ROSEOLA.

IT appears from an article in the *Revista Medica*, Chili, signed by Dr. Ugarte, that they have been having in the city of Santiago a very extended epidemic of roseola. In its different forms, benign or more intense, its infectious or infecto-contagious character was very evident.

The eruption began usually upon the forehead, spreading thence with great rapidity. The duration of the disease was from twenty-four hours to four or five days, and it presented two forms, one cold, the other hot. There seemed to be also an infection of the blood by toxic substances from the liver, and these entered the blood in sufficient quantities to provoke fever.

The treatment usually adopted was administration of large doses of calomel followed by a neutral salt. At the same time, the intestines were disinfected, and the functions of the skin carefully attended to. The mortality was exceedingly slight.

#### CIUDAD BOLIVAR MEDICO.

WE have received a number of a little medical magazine, bearing the above title, coming from a city six hundred miles up the great Orinoco river. It might be readily supposed that at this distance from the centers of civilization, a medical magazine would have hard work to exist; but those who think in this way, are unacquainted with the energy and scientific training of our Venezuelan brethren.

In this little town, so far inland, the medical fraternity is at once studious and well-posted in what is going on in the great world.

At the head of the profession is our old friend Dr. Doroteo de Armas, who is also rector of the University.

Among the notices in this journal we find that beriberi is making about the same ravages as in former years, and that it is found as difficult to cure as before; also a notice of a rare plant, the peculiarity of which is that its seeds are able to move and even to spring from the seed capsules of their own accord.

We welcome the new journal to our table, and hope to hear frequently from its talented contributors.

#### CATRAMINA.

CASATI states that *catramina*, isolated by Bertelli from the tar of *abies canadensis*, is endowed with a specific action against the bacillus tuberculosis. In gelatine cultures, catramina arrests the development of the bacillus and kills it. For this it requires three drops, to five grammes of culture fluid. The drug has been given to rabbits in considerable doses, for long periods, without injury to the health.—*Med. Zeit.*

[This would require a dose of six pounds to render aseptic the body of a man weighing one hundred and fifty pounds.]

THE report of the New York Analyst of Drugs shows that the chances for getting drugs of good quality on prescription is 43.8 per cent.; fair, 17.4; inferior, 26.; not as called for, 11.6; excessive strength, 1.2.

A PALATABLE LAXATIVE.—Make a strong concentrated infusion of senna leaves; strain this through a muslin cloth, and boil in the strained liquid as many *prunes* of good quality as can be well boiled in the quantity of infusion. Stew the prunes in the liquor thoroughly, in the same manner as if for the table, properly seasoning. When well cooked put in a glass jar, screw the top down tightly and set away in a cool place. Two or three or four of these prunes eaten during the day will overcome some of the severest cases of constipation. There is no suggestion whatever of the senna in the taste of the prunes, and the effect is most desirable. If taken at bed time, when a laxative is desired, the bowels will move nicely in the morning. They can be taken on the most sensitive stomach, and when other laxatives would produce undesirable results.—*Chi. Med. Times.*

## Letters to the Editor.

### CORRECTION.

YOUR reporter, in crediting me with "Fifty-three successive ovariectomies without a death," in the TIMES AND REGISTER for the 16th ult., misunderstood my statement, and I beg leave to correct his error.

What I said, in reply to a question by one of the spectators as to my results with laparotomy, was, "If this case recovers, as I see no reason to doubt at present (and as she did, without a drawback), it will be my fifty-third successive *ovariotomy*, with but one death, and that was an intraligamentous ovarian cyst, the very worst variety of such tumors for removal. That patient died of septic peritonitis."

I also added that the ovariectomies included many bad and difficult cases, such as ovarian abscesses, adherent dermoid and multilocular cysts, with purulent contents, and universally adherent pus-tubes, not more than two or three being uncomplicated cysts.

Since then I have done three more ovariectomies—one a very bad case of ovarian and tubal abscess, with universal adhesions, all of which have recovered, making thus *fifty-six successive cases of recovery from removal of diseased ovaries*, either tumors or adherent and inflamed, with but one death—the thirty-third in the series.

During this time I had two fatal hysterectomies for fibroids, one death (from heart-failure) after ventrofixation for prolapsus, and one from exhaustion after abdominal section for purulent peritonitis. But these operations should not, I think, be classed with ovariectomies proper.

PAUL F. MUNDÉ.

NEW YORK CITY.

### MATERNAL IMPRESSIONS.

HAVING noticed considerable controversy *pro* and *con* in reference to maternal impressions, recently, in medical journals, we submit the following interesting item without comment: On Friday evening last there was born to the wife of Geo. W. Curtis, of Weston, a girl baby, who was eyeless. The unfortunate little being is not only sightless, but is disfigured by having not even the semblance of eyeballs, the orifice where the eyes should have been being but slightly marked. The child is lively and healthy, but the beauties of this world, or that portion of them that are conveyed to the mind through the retina of the eye, must forever remain a sealed book to her.

"Its parents are at a loss to account for its lamentable peculiarity, but it may be due to the following singular circumstance: Six months before the birth of the little one the mother became totally blind at sundown, but in the morning her sight was restored. Thinking the trouble was due to the affection known as 'wild hairs,' she removed her eyelashes, one at a time, to rid herself of the evil."—*Oregon Journal.*

Opponents of the theory of maternal impressions will please make a note of the above facts and explain upon what other hypothesis this wonderful freak of nature could have occurred.

A. L. SAYLOR, M.D.

HAINES, BAKER CO., OREGON.



## Society Notes.

## THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Second Annual Meeting held in Nashville, Tennessee,  
November 12, 13, and 14, 1889.

NOVEMBER 12.—FIRST DAY.—MORNING SESSION.

[Continued from page 740.]

SECOND DAY.—MORNING SESSION.

DR. GEO. J. ENGELMANN, of St. Louis, read a paper entitled

MENSTRUATION AND PREGNANCY AFTER REMOVAL  
OF BOTH OVARIES.

The following are the conclusions drawn from the history and microscopical examination of Dr. Engelmann's cases, which are corroborated by numerous cases of oöphorectomy and double ovariectomy now observed, whose histories have been recorded for a sufficient length of time after the operation:

1. That the continuance of menstruation after the removal of both ovaries is due to remnants of ovarian stroma left *in situ*.
2. That portions of the ovarian tissue, however small, which remain after the removal of the greater portion of the organ, whether or not the Fallopian tube be preserved, may retain their activity and continue the functions of the entire organ.
3. Even elongated pedicles may contain ovarian stroma in which the functional activity of the organ may be continued.
4. That remnants of ovarian stroma do not necessarily preserve their vitality and functional activity.

The deductions of practical value to the operator are even of greater importance, and they are these:

(a) For the successful performance of oöphorectomy, it is requisite that every particle of ovarian stroma shall be removed if the desired result is to be expected with certainty.

(b) If shrinkage of fibers, the limitation of hemorrhage or cessation of annoying symptoms is to be accomplished with the greatest certainty, both ovaries must be completely removed, and not even a particle of ovarian tissue left *in situ*.

(c) In the performance of double oöphorectomy in women not yet beyond the climacteric, and not suffering from utero-ovarian reflexes, such healthy ovarian tissue as may exist should be spared, in order that function activity may not be impaired.

DR. W. D. HAGGARD, of Louisville, said it is very rare for a woman to menstruate regularly after removal of both ovaries and both tubes. He believed that the hemorrhagic discharges from the uterus after oöphorectomy depended upon some other cause than that of menstruation. It may depend upon some trouble connected with the endometrium, as suggested by Dr. Engelmann, a polypoid growth, or a congested condition of the bloodvessels which supply the endometrium. In January last he removed both ovaries and both tubes in a woman, and it is barely possible bits of ovarian stroma were left behind, as three months later the patient continued to have hemorrhagic discharges which greatly annoyed her.

DR. A. W. JOHNSTONE, of Danville, Ky., held that the ovary has no more to do with menstruation than the clitoris has. To prove this he had left ovarian tissue behind, yet menstruation had ceased. Dr. Johnstone gave at length his reason for this theory.

DR. VIRGIL O. HARDON, of Atlanta, Ga., had operated on a patient about eighteen months since for a bleeding fibroid tumor, removing both ovaries, and in removing the second ovary he feared he had not removed all the ovarian tissue, as the precarious condition of the patient would not permit a continuance of the operation. The patient recovered from the operation, and has menstruated with unvarying regularity from that time to the present.

DR. RICHARD DOUGLASS, of Nashville, said that Battey's operation of itself does not control menstruation, whereas in Prof. Tait's operation, which consisted in the removal of both ovaries and both tubes, the gynæcologist embraces in his ligature the nerve which controls menstruation.

DR. A. V. L. BROCKAW, of St. Louis, warmly took exception to the remarks of Dr. Johnstone, who was inclined to give Tait the credit of first performing oöphorectomy. He said he admired Tait's skill as an operator, but as a man he did not, for with characteristic modesty he (Tait) adds his name to operations that do not rightfully belong to him—as, for instance, the flap splitting operation.

Dr. Brockaw's remarks were warmly applauded.

DR. W. H. WATHEN, of Louisville, said gynæcologists were more familiar with the laws that govern menstruation in many respects than they formerly were, but that we still require more scientific investigation, personal observation, and experience to convince us that any one cause controls menstruation.

DR. A. W. JOHNSTONE arose to defend an absent friend. The statement made by Dr. Brockaw that Tait was the originator of the flap splitting operation is not true. A full description of the method could be found in a recent issue of Mundé's journal. It is true, however, that Tait had used it without knowing it had been described some twenty years ago by a Dublin surgeon; but he has given him due credit for the operation.

The paper was further discussed by DRs. G. FRANK LYDSTON, of Chicago; JOHNSTONE; and discussion closed by DR. ENGELMANN.

Dr. Davis's paper, which will appear in this journal shortly, with illustrations, was followed by one entitled  
INTESTINAL ANASTOMOTIC OPERATIONS WITH SEGMENTED RUBBER RINGS, WITH SOME PRACTICAL SUGGESTIONS AS TO THEIR USE IN OTHER

SURGICAL PROCEDURES,

by A. V. L. BROCKAW, of St. Louis, Mo.

For many months the author has been experimenting with segmented rubber rings in all the anastomotic operations, and such operations as gastrotomy, cholecystotomy, duodeno-cholecystotomy, jejuno-cholecystotomy, and circular enterorrhaphy. The rings used by him are rapidly made—during an operation if necessary. All that is required is some rubber tubing or a soft ordinary rubber catheter, and some catgut. He prefers tubing one-sixteenth to one-eighth of an inch in diameter. A section of this,

of sufficient length to make a ring of the desired aperture, is cut into four to eight segments. Passing heavy strands of catgut through the lumen of these pieces, the ends are tied tightly enough to bring the ends of all segments together, forming an oval ring. To the catgut strands are tied from four to six silk apposition threads, twelve to fourteen inches long, and the attachment of needles to these threads renders the ring ready for use. Another method is to pass a heavy double strand of catgut continuously through the segments several times; approximate the ends of the segments, and push the ends of the catgut into the tubing. This ring will have a better surgical finish, and after the apposition threads are tied between the segments, the ring will maintain its perfect form until the catgut is absorbed. The rings were passed as early as the fifth day in one of his experiments. In forming an anastomosis, after ordinary No. 6 darning needles are attached to the apposition threads, compress the ring and pass it through the opening made in the lumen of the bowel, then pass the threads through the intestinal wall from within outward. Ascertaining that the ring rests well in place, proceed to the second in the same manner; appose, and after scarification of the marginal serous surfaces, as suggested by Senn, tie the apposition threads. When possible, it is well to utilize omental grafts, which add to the security. With two such rings circular enterorrhaphy may be performed, the rings corresponding in size to the lumen of the bowel, care being taken that they are not so large as to press too much upon the delicate mucosa or to overstretch the bowel, as a local gangrene might then follow. Introducing a ring at each end of the gut at the point of section, the threads are passed through the wall less than one-third of an inch from the divided margins. The distal end of the gut is invaginated and the proximal gut pushed into the distal, bringing the serous surfaces in contact. The threads are then tied, and a few Lembert sutures added, the entire operation requiring less than ten minutes. In one-half of his experiments with this operation the result was excellent. Of the 14 dogs operated on by this method, in 7 the results were all that could be desired; marked stenosis was found in several cases, and in all a ridge at the seat of the operation.

In a recent paper the essayist mentioned a new procedure of closing large wounds of the intestines, especially gunshot, where, by ordinary suturing, stenosis would result. This method applies to wounds of the surface of the intestine; those of the mesenteric portion usually require resection. By this simple method wounds the size of a half dollar may be closed in less than five minutes. The wound being trimmed and enlarged with scissors, a ring two-and-a-half inches in diameter, made of eight segments of tubing, with six apposition threads, two on each side, so arranged that when the apposition threads are tied the ring is held bent evenly on itself. Such a ring is introduced into the bowel, the end apposition threads passed, then the lateral, using a single catgut suture in drawing the wound margins together at the point of flexure in order to prevent eversion. A few Lembert sutures complete the oper-

ation. If two wounds are close together in the same loop, a lateral anastomosis might be formed, if possible. With more than two wounds close together, excision and lateral anastomosis will require less time than circular enterorrhaphy or the sewing up of several wounds. Other conditions, where the single ring may be used, are perforating ulcers, fistulas, etc. The great advantage of the segmented rubber rings over other devices used, is the simplicity of their construction and the rapidity with which any number may be made. The large aperture of segmented rings makes it possible to perform ileo-colostomy by the following method, which the author believes is original: The ileum being divided a short distance from the cæcum, the divided end of the distal bowel is invaginated into itself and secured by a continuous suture through the serous and muscular coats. Above the proximal end a clamp is placed, and a ring adjusted to the lumen; a slit is then made in the convex surface of the ascending colon, and a ring introduced. The bleeding checked, the proximal end of the divided ileum is inserted into this slit, the threads tied, and Lembert sutures added. This operation may be quickly performed, and is indicated in such cases as irreducible intussusception of the ileum into the cæcum, and malignant diseases of the colon.

Appended is a series of operations, with the results:

Gastrostomy—2 experiments, 2 recoveries.

Gastro-jejunoscopy—3 cases, 2 recoveries, 1 death from peritonitis. (Dog tore one suture eight days after operation.)

Jejuno-ileostomy—1 case, result perfect.

Ileo-ileostomy—2 cases, 1 death due to perforative peritonitis.

Ileo-colostomy—2 cases, 2 perfect results.

Colo-colostomy—3 cases, 1 death.

Ileo-rectostomy—2 cases, perfect results.

Circular enterorrhaphy—14 cases, 2 deaths.

Duodeno-cholecystotomy—3 cases, 2 deaths from peritonitis. (This operation is difficult to perform on a dog, for anatomical reasons.)

Partial duodenectomy—2 cases, 1 perfect result.

Partial jejunectomy—2 cases, 2 perfect results.

Partial ileo-ectomy—4 cases, 1 death.

Partial colectomy—2 cases, 2 perfect results.

*Summary*—Intestinal anastomotic operations, 14 cases, 3 deaths. Circular enterorrhaphy, 14 cases, 2 deaths.

The single ring, formed of eight segments of tubing, was used in closing wounds varying in size from a quarter to half a dollar, in 9 cases, with 1 death. The clamp devised by him, and used in the operations, is made of No. 12 copper wire, covered with unperforated rubber tubing of small size.

Discussion postponed till afternoon.

#### AFTERNOON SESSION.

The papers of Drs. Davis and Brockaw were discussed by Drs. W. O. ROBERTS, VIRGIL O. HARDON, B. E. HADRA, A. M. OWEN, HUNTER MCGUIRE, W. W. POTTER, R. S. CUNNINGHAM, G. FRANK LYDSTON, RICHARD DOUGLAS, GEO. J. ENGELMANN, W. E. B. DAVIS, and discussion closed by the essayists.

(To be continued.)

## Camden Letter.

SINCE my last letter to the TIMES AND REGISTER, detailing the doings of the medical men of Camden, we have passed through the pleasurable excitement resulting from the meeting of two of our societies.

On Tuesday, November 12, the Forty-third Semi-annual Meeting of the Camden County Medical Society was held in this city, with the President, Dr. William A. Davis, in the chair, and the Secretary, Dr. E. L. B. Godfrey, present. There was a large attendance of physicians from all parts of the county, and also Prof. John V. Shoemaker, of your city.

The proceedings were of a very interesting and animated character, the attention of members being sustained nearly four hours by the reading and discussion of the important papers presented. Dr. H. A. M. Smith, of Gloucester City, Chairman of the Section on Practice of Medicine, introduced Dr. W. S. Jones, of Camden, who read a paper entitled, Reflex Diseases of the Upper Air Passages.

Dr. Dowling Benjamin, Chairman of the Section on Surgery, read a short paper on Trephining the Spinal Cord for Fractures, in the course of which he briefly described the operation performed at the Cooper Hospital, recently, for the relief of a man who had, by a fall, fractured the fourth cervical vertebra. This subject is of such great interest and importance that we hope the doctor will elaborate his paper and publish it. Dr. Benjamin also described the technique of an operation for the removal of an ovarian tumor with very extensive adhesions; and before resuming his seat he exhibited to the Society an ingenious apparatus, which he had devised, for the rapid rolling of the plaster of Paris bandage. Dr. O. B. Gross gave the history of a case in which a large bean was found in the left bronchus; and described a singular accident which resulted in rapid œdema of the glottis and death, before help could be obtained.

Dr. Daniel Strock, Chairman of the Section on Hygiene, read a lengthy paper entitled, The Camden City Water Supply, which was listened to with close attention, and thoroughly discussed. Dr. John R. Stevenson read a paper upon the Hygiene of Had-donfield.

In the Section on Obstetrics, of which Dr. Edwin Tomlinson, of Gloucester City, is Chairman, the only paper offered was by Dr. E. L. B. Godfrey, entitled, Puerperal Convulsions. This was an excellent presentation of the subject, and stimulated an animated discussion.

Dr. Joseph H. Wills, Chairman of the Section on Pathology, described the bacillus of typhoid fever, and exhibited a specimen with his microscope.

After the meeting the Society repaired to the dining-room and partook of an elaborate banquet, during which the following toasts were offered: Higher Medical Education, which was eloquently replied to by Prof. John V. Shoemaker; The Camden County Medical Society, responded to by Dr. H. Genet Tay-

lor, ex-President of the Medical Society of New Jersey; The Camden Training School for Nurses, responded to by Dr. Daniel Strock; The Camden City Medical Society, to which its President, Dr. E. L. B. Godfrey, happily replied; Medical Co-Education, to which Dr. O. B. Gross fittingly answered.

On Thursday evening, the 14th instant, the Camden City Medical Society held its regular monthly meeting, with Dr. E. L. B. Godfrey, the President, in the chair. The subject of discussion for the evening was, the Treatment of Tuberculosis, which was participated in by Drs. H. Genet Taylor, D. Benjamin, W. H. Iszard, G. T. Robinson, A. M. Mecray, R. Casperson, E. P. Townsend, W. H. Ireland, and others. The discussion was impromptu, as the essayist appointed for the evening was not present, and it developed the fact that the Society was well informed upon all that pertains to the varied and latest treatment of this disease.

The Camden Training School for Nurses, the exercises connected with the opening of which I detailed in my last letter, is already upon a firm business foundation. The number of pupils enrolled has exceeded the most sanguine expectations of its promoters; and the best element of Camden's people attest their approval of, and sympathy with, the movement by crowding the lecture-room upon every occasion of lectures.

The Fifteenth Annual Meeting of the New Jersey Sanitary Association was held in the State House, at Trenton, on Friday and Saturday, November 22 and 23. Three of Camden's physicians enacted a more or less important part in the proceedings, which were of an unusually interesting character. The President, Dr. Dowling Benjamin, of this city, occupied the chair. At the Friday evening session he read his annual address, entitled, The Thermometry of Hygiene. This was an able and timely paper, and was received with great applause by the large audience of distinguished gentlemen present. Dr. E. L. B. Godfrey, of this city, in an interesting speech, opened the discussion on the subject of The Need of Medical Officers for School Districts; and Dr. Daniel Strock, also of Camden, discussed the Climatic Treatment of Gastro-intestinal Diseases in Children.

D. S.

CAMDEN, NOV. 20, 1889.

## Book Reviews.

KRITIK DER VACCINATIONS STATISTIK, UND NEUE BEI-TRÄGE ZUR FRAGE DES IMPFSCHUTZES. Von JOSEF KÖ-RÖSI. Berlin: Puttkammer u. Mühlbrecht, 1890.

The world owes much to the learned and industri-ous Director of the Budapest Bureau of Statistics for the manner in which he has detected and demon-strated the astounding way in which the anti-vac-cinationists had manipulated the official statistics of Austria in order to make them support their theories. It is sufficient to say that henceforth it will require more proof than the personal assertions of this party to win credence.



## AN EXPERIMENTAL STUDY IN THE DOMAIN OF HYPNOTISM.

By DR. R. VON KRAFFT-EBING, Professor of Psychiatria and Nervous Diseases in the Royal University of Graz, Austria. Translated from the German by Charles G. Chaddock, M.D., Assistant Physician, Northern Michigan Asylum. New York: G. P. Putnam's Sons, 1889.

Just at the present time, when hypnotism is being vigorously discussed on every hand, the appearance of the above translation is most appropriate. It is as unwise to deny the reality of hypnotism as it is to believe in its universal application to all persons alike, and for the relief of all sorts of troubles. But strange things are being developed nowadays in regard to mentalization, and as Arago said in 1844, "He who uses the word *impossible*, without the sphere of pure mathematics, is at least careless. As soon as one is concerned with the living organism, caution becomes a duty."

Krafft-Ebing has long been acknowledged an authority upon diseases of the mind, and his name is identified with the progress of knowledge in regard to the phenomena comprehended in the term "insanity." He began the study of the remarkable case which furnishes the subject matter of the present volume free from prejudice, and with a considerable degree of skepticism. The patient was the possessor of three distinctly separate states of consciousness, which had absolutely nothing in common save that they were observed in one and the same person. The experiments were all performed in a manner to positively exclude every chance of simulation. They were many times repeated before medical societies, during clinical lectures, and in the presence of medical men invited to test for themselves the reality of the results.

After a careful perusal of this report, one can acquiesce with the statement of the author that "the greatest skeptic with regard to hypnotism can have no reason to think of fraud in this case." Though such experiments as *suggestion mentale*, the use of sealed vials containing various drugs, and clairvoyancy terminated negatively, yet the production of blisters and stigmata, the regulation of the bowels, and the modification of the sensory and motor apparatus by simple suggestion, were no less astonishing than real. The record of these experiments reads like the wildest fiction of the imagination. Yet all the phenomena observed were entirely within the sphere of physiology, and found their analogies in the various hysterical states.

We earnestly commend to the skeptic of hypnotism the careful study of this little book, which has already passed through two German editions. The profession is indebted to Dr. Chaddock for his able translation, as well as the happy thought of publishing so carefully a prepared monograph by a wellknown authority.

## Pamphlets.

Eighth Annual Convention of Trustees and Superintendents of the Children's Homes in Ohio, held at Newark, September 17, 18, and 19, 1889. Pp. 64. Keating & Co., Cincinnati, 1889.

Sixteenth Annual Report of the Maternity Hospital, 734 South Tenth Street, Philadelphia, 1889. Press of Patterson & White.

## The Medical Digest.

COFFEE is a good vehicle for antipyrin.

THE name of the Hôpital du Midi has been changed to the Hôpital Ricord, in honor of the great man whose twenty-nine years of service gave the hospital its celebrity.

ASSAKY recommends the bi-iodized salicylic acid (*Acide salicylique bi iodé*), in the treatment of articular rheumatism. The daily dose is twenty-three to sixty grains, and from this he reports very remarkable analgesic and antithermic effects.—*Rev. de Thér.*

PAGLIANO denies that there is any connection between the condition of the heart in typhoid fever and the occurrence of pulmonary accidents, and attributes the latter simply to the advent of Eberth's bacillus, with sundry favoring conditions.—*Revue de Thér.*

THE cholera has subsided in Bagdad, and the latest advices from Persia are more favorable. At the outbreak of the pestilence, the Arabs encamped upon the Euphrates betook themselves to the heights and suffered no stranger to enter their camps, which remained free from the disease.

## FOR AURAL FURUNCLE.—

R.—Menthol . . . . . gr. xv.

Ol. amygdalæ dulcis . . . . . 3 v.

M. S.—Introduce twice daily on borated cotton.

—Cholewa.

CHAUVEL affirms that the tolerance of the tissues for leaden bullets is by no means as common as some claim, and is by no means an habitual fact. The immediate extraction of the bullet should not be made the rule, nor should it be neglected when extraction is easy and devoid of danger.—*Revue de Thér.*

MAUREL gives the designation of *hypo-hematosi* to that condition in which the proper balance is not found between the height, weight and thoracic capacity, insufficiency of the latter causing deficient respiratory power. This is to be remedied by respiratory gymnastics.—*Revue de Thérapeutique.*

THERMO-PALPATION. — Thermo-palpation hails from Hungary, where it has been employed for the last year or two in the wards of Prof. Ketli with, it is said, excellent results. It is performed simply by carrying the pulps, or sometimes the backs of the fingers, lightly over the surface of the chest, which is of course, uncovered, and noting the feeling of warmth imparted to the fingers. It will be found that where they pass over solid organs, such as the liver, the temperature is distinctly lower than when they pass over the lungs containing air. If the surface is palpated systematically for temperature, it will be found that the borders of the liver and heart can be accurately marked out. By means of specially constructed thermometers, it is stated that an exceedingly accurate mapping out can be accomplished, and small differences in the condition of the lungs themselves recognized.—*Hospital Gazette.*







An eminent microscopist finds that genuine honey can be readily distinguished from manufactured honey by the microscope, as the former has few or no sugar crystals.

STOUKOWENKOFF has utilized a new preparation of mercury, for hypodermic injection. His formula :

R.—Oxybenzoate of mercury . . . . . gr. ivss.  
Distilled water . . . . . 3 x.  
Chloride of sodium . . . . . gr. ½.  
Hydrochlorate of cocaine . . . . . gr. ij.—M.

—*Revue de Thérapeutique.*

INEBRIATE ASYLUMS.—The following extract is from a recent lecture by Dr. Crothers on this topic :

The first inebriate asylum, at Binghamton, N. Y., was projected in 1844, but was not opened for patients until 1864, twenty years later. This was owing to the intense and bitter opposition to the theory of disease and curability in special asylums. A good illustration of the historical fact, that every new truth in the progress of the world is greeted with storms of denial and fierce contradiction. The disease of inebriety, and its curability in asylums, was a great event that could not be suppressed by the change of Binghamton to an insane asylum, and today there are over a hundred asylums for inebriates in different parts of the world. Most of these asylums are founded on the fact, now well established, that inebriety is a disease of the brain and nervous system. The use of alcohol in many cases may be only a symptom, in other cases alcohol starts up a train of degeneration which has been inherited, and in all cases there is progressive dissolution of the brain and nervous system, that can easily be reached by medical treatment addressed to the entire system. The removal of alcohol is only one factor in the treatment, the removal of the causes will always be followed by the cessation of the desire for spirits. All treatment and remedies addressed to one state or condition of the body fails for the reason that inebriety is not a local desire, and does not come from the use of alcohol alone. Hence the true principles of treatment must include not only restraint, but limited freedom, together with all means known to science to build up and strengthen the entire system. In the largest and best asylums in this country and Europe all cases are treated as sick and diseased, the duration and degree of restraint is modified to meet the demands of each case, and the general treatment aims to remove the special and general causes which have brought on the disease.

It is a deplorable fact that all inebriate asylums are judged by the statements of incurables who have failed to be benefited by treatment. Judged from these criticisms no inebriate asylum could exist long. Those who are more or less cured in these asylums, disappear and never refer to them, or the benefits they have received. The criticisms of our work have been inspired in many cases by the incurables, while those who have been restored have been silent.

CHLOROFORM AND LOCOMOTOR ATAXY. — Dr. Thiem, having had to give a patient with slight signs of locomotor ataxy chloroform for the purpose of examining an abdominal tumor, was surprised to notice that as she was being helped from the room, while still somewhat under the influence of the chloroform, she walked with a typical ataxic gait, though this symptom was not ordinarily present. On watching other patients, who were not suffering from this affection, trying to walk while still partially under the influence of the chloroform, Dr. Thiem convinced himself that the peculiar gait only occurred in the subjects of ataxia; in whom the semi-narcotic state brings out the want of coördination in the movements of the legs. The explanation would appear to be that inasmuch as the peculiar gait is not due to any paralysis of the muscles, but only to the want of coördinating power, which is set in action by the control exerted by the muscular sense, and the sense of sight, when, as in the case of a half-chloroformed subject of locomotor ataxy, both the central coördinating apparatus and the peripheral regulating machinery are in a more or less inactive condition, there is a double reason for the existence of the well-known jerking and sliding movements of these patients. It would appear, then, that in doubtful cases of locomotor ataxy some assistance towards a correct diagnosis might sometimes be obtained by partially anæsthetising the patient, and then observing his gait as he walks across the room.—*London Lancet.*

#### THE PHYSIOLOGICAL ACTION OF SAND BATHS.—

Dr. N. V. Pariyski has added to the scanty literature of sand baths his observations made upon twenty-five patients in Eupatoria, on the shore of the Black Sea (Crimea, sixty miles W. N. W. of Sevastopol). The patients suffered with various rheumatic complaints. The baths are prepared as follows : At 10 A. M. small heaps of dry sand were made sufficient in number to cover one person. At 11 A. M. the temperature of the sand was about 38–39 R. A hollow was made in the heap, and the patient laid there and covered with the sand, beginning with the lower extremities. The patient remains in the bath without discomfort for nearly half an hour.

Five minutes after the entrance into the sand bath, the patient begins to perspire, and in twenty minutes the whole body is covered with a layer of wet sand half-an-inch thick. The patient is taken out of the bath, the wet sand rubbed off with the aid of dry sand, and he is then washed with warm water.

The following results as to the physiological action were obtained :

1. *Temperature* (in axilla) always rises.
2. *Pulse*, after the bath, was increased on the average by 8.6 beats in a minute.
3. *Respiration* increased, maximum eight in one minute.
4. Amount of exhaustion considerable. The average loss in weight was one pound, the variations being from one-sixth to three and one-half pounds.

—*Vratch.*

## Medical News and Miscellany

CARROLLTON, Ill., has had a smallpox quarantine.

SOUTH AFRICA is overcrowded with members of the medical profession.

CAMDEN pays its doctors twenty-five cents for each case of contagious disease reported.

It is said that an astonishing amount of Jamaica ginger is sold in Maine for drinking purposes.

THE pharmaceutical exhibit at the late Paris Exposition seems to have been practically a failure.

THE *Milwaukee Journal* says that dyspepsia and a broken heart exhibit a wonderful similarity in their surface indications.

COMPRESSED tablets of soda mint in bottles with metallic stoppers become impregnated with the copper in the stoppers, and are thus unsafe for use.

TYPHOID fever is raging to an alarming extent in St. Peter's Orphan Asylum, Newark. The fever is believed to have been caused by bad sewerage.

SOME of the employees of the Bank of Switzerland were lately poisoned by handling bank bills. The bills were colored with Schweinfurt green, an arsenical poison.

THIRTY-FIVE Pennsylvania Railroad conductors listened to a lecture by Dr. Dowling Benjamin in Cooper Hospital, Camden, on "Hemorrhages, Accidents and Emergencies."

A Bridgeboro, N. J., man is walking around with a china doll in his stomach. It is not explained why the toy was put in his mouth, but the swallowing was said to be accidental.

AN epidemic of diphtheria is reported to have broken out at Lancaster, Ohio. More than 100 cases are reported, and the public schools have been closed by order of the Board of Health.

SIXTY children at the Ohio Soldiers' and Sailors' Orphans' Home, at Xenia, Ohio, are in the hospital, suffering from scarlet rash and mild forms of scarlet fever. There are 900 children in the institution.

THE king of the Warramaugas, an Australian tribe, a lad of nineteen, died last month in the Adelaide Hospital. When he became king he refused his royal rank, and had for several years been acting as a guide.

PROF. DIXON states that consumption can be communicated by the use of family tooth brush trays in bath rooms, the brushes thus lying with their bristles in close proximity, affording a medium for the spread of the tubercle germs.

THE Lecture Association of the University of Pennsylvania announce that Miss Amelia B. Edwards has been engaged to deliver a series of six lectures on Egyptology; beginning upon December 4, and continuing on each Wednesday and Saturday. They will be given at Association Hall; the Wednesday lectures at 3.30 P.M., and those on Saturday at 2 P.M.

THE sight of Apollo in red velvet knee breeches will tickle the everlasting gods, says the *Canton News-Democrat*. The literary society of an Ohio Normal School have thus draped the mythical and muscular son of Jupiter and Latona.

DR. KARL KOLLER, of Vienna, who has the credit of discovering cocaine, says that he always administers that drug himself, never prescribing it for a patient, so that the latter cannot secure more of it by merely refilling the prescription.

A VEGETARIAN craze has struck Chicago, a new society having been started to promote this branch of gastronomic science. The movement started among the W. C. T. U., who claim that the eating of meats creates an appetite for strong drink.

SAPOLINI, of Naples, in the treatment of deafness in old age, mops the membrana tympani with a weak oleaginous solution of phosphorus, claiming that this diminishes the opacity of the membrane, increases the circulation, and improves the hearing.

DIPHTHERIA to an alarming extent prevails in Burlington, Iowa, and the country adjacent. There have been several deaths this week, and many children are down with the disease. Precautions are being taken to prevent the spread of the infection.

THE Powers College of Pharmacy, named in honor of the late Thomas H. Powers, and whose incorporators are Dr. Lemuel J. Deal, John E. Cook, Dr. William H. Pancoast, Dr. James Van Buskirk and Dr. Ernest F. Apeldown, has applied for a charter.

MRS. BARTLETT, of Chicago, has discovered a process for developing photographs without the aid of a dark room. She simply exposes the negative to the light for a few minutes, with a sheet of paper clapped on it. The pictures resemble fine etchings. Amateur photographers will appreciate this discovery.

DR. F. O. DONOHUE has been appointed a member of the Syracuse Board of Health by Mayor Kirk and also of the New York State Board by Governor Hill. The appointment has been received with approbation; the Syracuse journals referring to Dr. Donohue in very complimentary terms.

SECRETARY PROBST of the State Board of Health, visited the village of Deunquat, Ohio, and found the members of J. J. Smith's family stricken with smallpox. One little girl had died. Thirteen others have been exposed. The disease is supposed to have been communicated in rags purchased by Mr. Smith, who is a peddler in New Washington, where there were a few cases a year ago.

It does not require the lively imagination of Jules Verne to conjecture that a time may come when the body will be rendered truly enlightened by means of the electric light. If the open hand, the fingers close together, be held between the eye and bright sunlight or one of Edison's electric lamps, the fingers will appear to be somewhat transparent. We need but wait till this light is many times multiplied in strength, and the body may be rendered so transparent that the functions of life can be studied and disease processes noted with ease.



**To Contributors and Correspondents.**

ALL articles to be published under the head of original matter must be contributed to this journal alone, to insure their acceptance; each article must be accompanied by a note stating the conditions under which the author desires its insertion, and whether he wishes any reprints of the same.

Letters and communications, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication, however. Letters asking for information will be answered privately or through the columns of the journal, according to their nature and the wish of the writers.

The secretaries of the various medical societies will confer a favor by sending us the dates of meetings, orders of exercises, and other matters of special interest connected therewith. Notifications, news, clippings, and marked newspaper items, relating to medical matters, personal, scientific, or public, will be thankfully received and published as space allows.

Address all communications to 1725 Arch Street.

**Army, Navy & Marine Hospital Service.**

*Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, United States Army, from November 19, 1889, to November 30, 1889.*

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted Major Leonard Y. Fornig, Surgeon, in S. O. No. 241, October 16, 1889, from this office, is still further extended one month on surgeon's certificate of disability. Par. 3, S. O. 268, Hdqrs. of the Army, A. G. O., November 16, 1889.

MOSELEY, EDWARD B., Captain and Assistant-Surgeon, is relieved from duty at Whipple Barracks, Arizona, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Clark,

Texas, for duty at that station, reporting by letter to the commanding general, Department of Texas. Par. 4, S. O. 268, A. G. O., November 16, 1889.

FISHER, WALTER W. R., Captain and Assistant-Surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding officer, Fort Assiniboine, Montana, for duty at that station, reporting by letter to the commanding general, Department of Dakota. Par. 4, S. O. 268, Hdqrs. of the Army, A. G. O., November 16, 1889.

The leave of absence on surgeon's certificate of disability granted Captain Rudolph G. Ebert, Assistant-Surgeon, in S. O. 109, May 11, 1889, from this office, is extended six months on surgeon's certificate of disability. Par. 13, S. O. 270, Hdqrs. of the Army, A. G. O., November 19, 1889.

By direction of the Secretary of War, the extension of leave of absence granted Captain Valery Havard, Assistant-Surgeon, in S. O. No. 240, Oct. 15, 1889, from this office, is further extended one month. Par. 1, S. O. 272, A. G. O., November 21, 1889.

BALL, R. F., First Lieutenant and Assistant-Surgeon, Fort Riley, Kans., will proceed to Fort Sill, I. T., and report to the commanding officer for temporary duty at that post. Par. 2, S. O. 173, Dept. Mo., Nov. 21, 1889.

By direction of the Secretary of War, Captain James E. Pilcher, Assistant-Surgeon, is relieved from duty at Fort Ward, N. Y. H., and will report in person to the commanding officer, Fort Clark, Texas, for duty at that station, reporting also by letter to the commanding general, Dept. of Texas. Par. 3, S. O. 276, A. G. O., November 26, 1889.

Leave of absence for fifteen days is granted Captain John J. Cochran, Assistant-Surgeon, to commence about December 1, 1889. Par. 3, S. O. 272, Div. Atlantic, Nov. 27, 1889.

**Changes in the Medical Corps of the United States Navy for the week ending November 30, 1889.**

GUNNELL, F. M., Medical Director. Placed on the Retired List, November 27, 1889.

GAINES, J. H., Surgeon. Ordered to duty at Army and Navy Hospital, Hot Springs, Ark.

**Medical Index.**

A weekly list of the more important and practical articles appearing in the contemporary foreign and domestic medical journals.

Alcohol in puerperal fever, Martin. An. of Gyn., Nov., 1889.  
Antiseptic midwifery, McRae. Atlanta Med. and Surg. Jour., Oct., Nov., 1889.

Artificial urinary canals, formation of, Wishard. Ind. Med. Jour., Nov., 1889.

Abdominal section, Hoffman. An. of Gyn., Oct., 1889.

An address delivered before the Northumberland and Durham Medical Society, Tait. Med. News, Nov. 9, 1889.

Beginners of Disease, Pope. Med. Press, Oct. 9, 1889.

Beiträge zur Aetiologie und Therapie der primären Pleuritis, Eugster. Deut. Arch., Oct., 1889.

Blut Körperchenzählungen und Hämoglobulin bestimmungen bei Kindern, Stierlen. Ibid.

Bakteriologisches über Otitis media, Levy u. Schrader. Arch. f. Exp. Path., Oct., 1889.

Blenorrhoea neonatorum, Williams. N. W. Lancet, Nov. 15, 1889.

Color blindness, Eldridge-Green. Med. Press, Oct. 23, 1889.

Concentrated solution of magnesium sulphate as an enema, Watkins. Md. Med. Jour., Nov. 9, 1889.

Constipation in childhood following diarrhoea, Vernon. Am. Pract. and News, Nov. 9, 1889.

Cartwright lecture, Billings. Med. News, Nov. 23, 1889.

Chronic endometritis and chronic vaginitis, Mundé. An. of Gyn., Nov., 1889.

Congenital dislocations of the hip, Evans. Med. News, Nov. 16, 1889.

Drei Fälle von Pericollitis, Windscheid. Deut. Arch., Oct., 1889.

Drink-craving, nature and management, Bird. Va. Med. Mo., Nov., 1889.

Diphtheria at high altitudes, Turner. Med. News, Nov. 9, 1889.

Die Krankheiten des weiblichen Körpers in ihren Wechselbeziehungen zu den Geschlechtsfunktionen, Müller. Deut. Med. Zeit., 31 Okt., 1889.

Der therapeutische Wert des Gurjensöls bei der Léprose, Foy. Ibid., 28 Okt., 1889.

Dysentery, treatment of. N. C. Med. Jour., Oct., 1889.

Die Behandlung der häufigsten und wichtigsten Augenkrankheiten, Königstein. Intern. klin. Rundschau, 27 Okt., 1889.

Dental irritation, reflex effects of, Brubaker. Intern. Dent. Jour., Nov., 1889.

Die Durchleuchtung in der Laryngologie, Freudenthal. Med. Monatsch., Nov., 1889.

Die Behandlung des Trachoma, Fischer. Ibid.

Die Behandlung der Blatternkranken, Hebra. Intern. Klin. Rundschau, 10 Nov., 1889.

Einige Fälle von geheilter Reflexepilepsie der Nase, Schneider. Berl. Klin. Wochenschr., 28 Okt., 1889.

Etiology of diphtheria, Pruden. N. W. Lan., Nov. 15, 1889.

Estudio sobre las enfermedades carbunclosas; su pecuena en Chili; medidas higiénicas y preventivas que convendria adoptar y su mejutratamiento, Boletín de Medicina, Mayo y Jun de 1889.

Erysipelas, Cartledge. Am. Pract. and News, Nov. 9, 1889.

Fever in pulmonary consumption, the treatment of, Mays. Md. Med. Jour., Nov. 9, 1889.

Fibro-cystic tumor of uterus, Baldy. An. of Gyn., Oct., 1889.

Forceps, application, to transverse and oblique positions of head, Fry. Jour. Amer. Med. Ass'n, Nov. 9, 1889.

Grundzüge zu einer programmässigen Behandlung der Diphtherie und des Kroups, Leonhardo. Deut. Med. Zeit., Nov., 1889.

Gunshot wounds, Manley. Med. News, Nov. 16, 1889.

Human throat, the, as a musical instrument, Calhoun. Atlanta Med. and Surg. Jour., Nov., 1889.

Hot injections in gonorrhoea and urethritis, Duke. Hosp. Gaz., Oct. 26, 1889.



- Insanity**, clinical observations on the scientific classification of the forms of, Jones. Va. Med. Monthly, Nov., 1889.
- Insular sclerosis of brain**, Lyman. Med. News, Nov. 16, 1889.
- Inyecciones hipodérmicas de bioxido de mercurio en el tratamiento de la sífilis**. Revista Méd., Agosto y Sept. 1889.
- Klinische Bemerkungen über Leprose**, Donnet. Deut. Med. Zeit., 28 Okt., 1889.
- Laparotomy and supravaginal amputation of the uterus for rupture, a successful case of**, Med. News, Nov. 9, 1889.
- Littre**. Hernia, two cases of, Penrose.
- La Couveuse-Fuerst**, Mansfield. Omaha Clinic, Oct., 1889.
- Non-tubercular hæmoptysis of elderly life**, address on. Med. Press, Oct. 23, 1889.
- Osteo-sarcoma of the spine**, Billings. N. A. Pract., Nov., 1889.
- Obstetrics**, lecture on the history of, Newman. *Ibid.*
- Olive or cotton-seed oil in gallstone colic**, a suggestion as to the action of, Stewart. Med. News, Nov. 23, 1889.
- Purulent peritonitis, with perforation of the appendix vermiformis**, Meigs. *Ibid.*
- Perityphlitic abscess lacking the usual symptoms**, Bellamy. N. Y. Med. Jour., Oct., 1889.
- Porro operation**, the, Price. An. of Gyn., Oct., 1889.
- Perineum**, an easy method of repairing, Da Costa. *Ibid.*
- Pyrocin, oder Acothyphenylhydracin**, Ziegler. Deut. Archiv, Oct., 1889.
- Pharmakologische Untersuchungen über Lobelin der Lobelia inflata**, Dreser. Arch. f. Exp. Path.
- Rest and exercise in heart disease**, Loomis. Med. News, Nov. 9, 1889.
- Rabia**, un case de, de siete meses y medio de incubacion, Hemmer. Cron. Méd. Quirúrgia de la Habana, Oct. de 1889.
- Skull**, injuries to the, with some observations on 118 cases, Manley. Brooklyn Med. Jour., Nov., 1889.
- Silver images**, the significance of the, in the inflamed cornea. Mennen. Brooklyn Med. Jour., Nov., 1889.
- Skin**, the hygiene of the, in health and disease, Shoemaker. Jour. Cutan. and Gen-Urin. Dis., Nov., 1889.
- Severe, continuous cephalalgia as an early secondary in syphilis**, Browning. Brooklyn Med. Jour., Nov., 1889.
- Stone in the bladder**, the choice of operation for, Cabot. Jour. Am. Med. Ass'n, Nov. 9, 1889.
- Summer diarrhoea and dysentery in children**, Guhman. Jour. Am. Med. Ass'n, Nov. 9, 1889.
- Sulla posizione fatta ai medici comunali dalla nuova legge sanitaria**, Ruata. La Salute Publica, 15 Ottobre, 1889.
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- Syphilis**, the indications for and the duration of the treatment of. Jour. Am. Med. Ass'n, Nov. 23, 1889.
- Syphilis**, the positive diagnosis of, medico-legal testimony, Cutter. Jour. Am. M. A., Nov. 23, 1889.
- Should children wear spectacles?** Beebe. Med. Current, Sept., 1889.
- Scirrhus carcinoma of the mammary gland**, Groff. Coll. and Clin. Rec., Oct., 1889.
- Simple anæmia**, Loeb. Weekly Med. Review, Oct. 19, 1889.
- Tuberculosis**, contagiousness of, Porter. Weekly Med. Rev., Nov. 2, 1889.
- Tubal pregnancy**, report of a case of, probable diagnosis. Parvin. An. of Gyn., Nov., 1889.
- Tubal pregnancy**, report of case, Baldy. An. of Gyn., Nov., 1889.
- Torticollis** greatly improved by toxic doses of gelsemium after failure of myotomy, Williams. Med. News, Nov. 10, 1889.
- The so-called third tonsil**, White. Jour. Am. Med. Ass'n, Nov. 23, 1889.
- Typhoid fever**, a case of, with subnormal temperature and pulse, Wiltse. St. Louis Med. and Surg. Journ., Nov., 1889.
- The white signal**, Barclay. *Ibid.*
- Ueber einige neuere Untersuchungsmethoden und ihre Bedeutung für den praktischen Arzt**, Fischl. Prager Med. Woch., 30 Oct., 1889.

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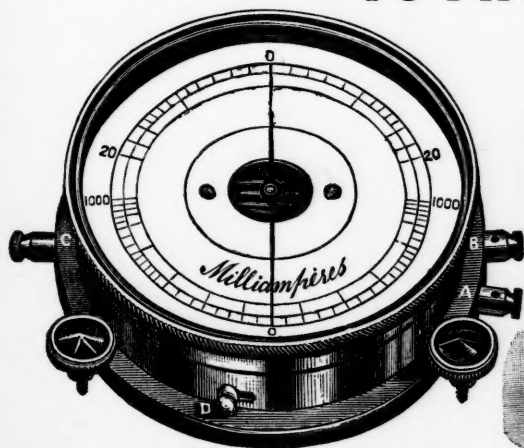
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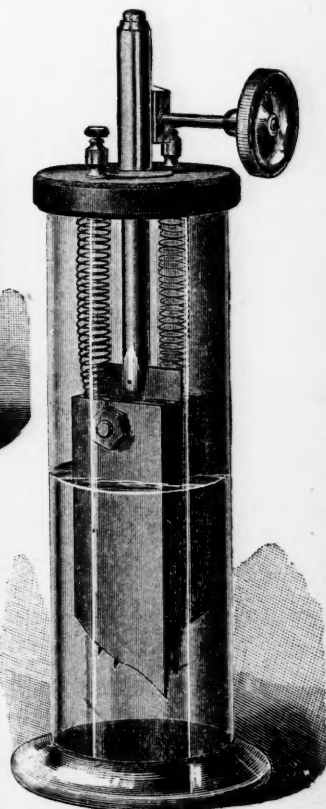


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## Notes and Items.

## ALL THE YEAR ROUND.

The north wind does blow,  
 And soon we'll have snow,  
 And what will the people do then?  
 Oh, they'll kick and they'll scold,  
 At the snow and the cold,  
 And long for the summer again.  
 But when summer comes back,  
 Then alas! and alack!  
 They'll howl at its terrible heat,  
 It may fry or may freeze,  
 It never can please  
 The kickers who kick with both feet.  
 —Chicago Herald.

## PLANTATION PROVERBS.

It doan' pay to do much talkin' w'en you'  
 mad enuff to choke,  
 'Kase de word dat stings de deepes' am  
 de one dat's never spoke.  
 Let de odder feller wrangle till de storm  
 am blowed away,  
 Den he'll do a pile ob thinkin' 'bout de  
 things you didn't say.

"DOCTOR," he said, as they met on the platform of  
 the street car, "can I get a little advice of you."

"For cash?"

"Well, no. I simply want to ask a question or  
 two, and being I'm an old patient of yours you won't  
 think of charging me."

"Go ahead."

"Well, my feet are troubling me and I thought—"

"Say! Cut 'em right off!" interrupted the doctor,  
 "I've often wondered why you didn't do it. I've got  
 to get off here—good night!"—Detroit Free Press.

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 ing use for over twenty years, and  
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 palpable powder of great bulk. It is of great therapeutic activity, very, very slightly acid, and absolutely  
 chemically pure.

It forms a mixture, when shaken with water, looking not unlike milk, and remains suspended four  
 times longer than any other BISMUTH made. It does not cake when settled; slight agitation being sufficient  
 again to suspend it. It is the ideal dusting powder.

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 and in which each Salt is a PURE HYPOPHOSPHITE. Each fluidrachm or teaspoonful contains:

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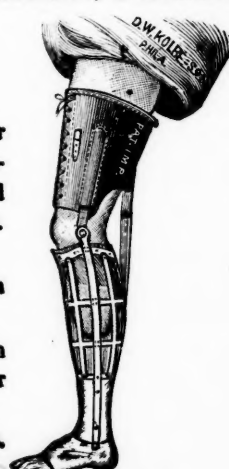
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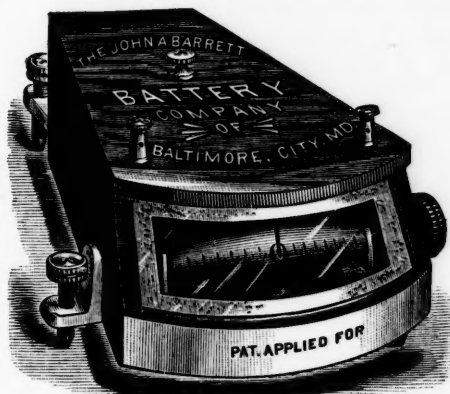
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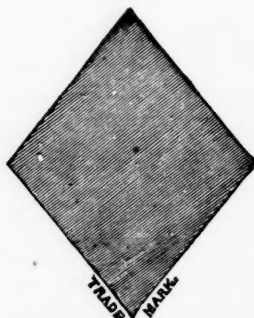
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